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ABSTRACT

The Georgia Television Evaluation Project was designed to provide: a model to evaluate the production and effectiveness of an ETV series; a model for the development of instruments and data-gathering procedures, statistical designs for analyzing and interpreting data, a field test of all prototype instruments and data-gathering procedures, a model for continuous evaluation of the GETV Network after the initial assessment studies have been completed, an estimate of cost factors and personnel requirements for operating an evaluation system, a model for the evaluation of the total impact of Instructional Television, and a model for evaluating the total impact of the Public Broadcasting segment of Educational Television. In Volume I the activities directly involved with developing the evaluation model itself are described. After the problem area, purposes, and characteristics of the network are specified in the first chapter, a brief overview of the research literature is presented. This summary is followed in Chapter Three by an overview of the research and evaluation activities. The model itself appears in the fourth chapter. Chapter Five contains recommendations resulting from feasibility studies. The volume concludes with a summary and suggestions for future research. (For related documents, see TM 002 622-635.) (Author/KM)

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VOLUME I

THE DEVELOPMENT AND FIELD TEST OF AN EVALUATION MODEL FOR EDUCATIONAL TELEVISION

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PREFACE

Data from many sources and people were input into the present project. As opposed to the usual deductive "research" activity the present project employed inductions. In addition, the results should perhaps be considered specific to the state of nature in the State of Georgia. Surely the strategies, methodologies and software are suggestive of many directions that efforts aimed at evaluating educational television might take, but our specific conclusions are data tied. Formal hypotheses were not tested, and feasibility significantly influenced data gathering. It is hoped that despite many constraints and practical problems the resulting model and selected data will meet with acceptance.

Many individuals were influential in the completion of the project. At Georgia Educational Television, Richard Ottinger, the Executive Director, together with O. Max Wilson, Clara W. Howell and Olan Cosper really got us off the ground by providing ideas, research leads and access to school personnel. Russell Clark, Director, and Jess Elliott, Coordinator of Evaluation, of the Division of Planning, Research and Evaluation of the Department of Education, in addition to monitoring the progress of the project provided technical advice. At the University of Georgia, Jerry Ayers and Peter Rowe provided invaluable assistance both in regard to ideas and actual implementation and operation. Many secretaries in the "Baldwin Fourth Floor" pool provided invaluable assistance and exhibited great patience. In particular Norma Faye Garrett, Barbara Silver, Peggy Nix, and June McClain should be singled for praise. Two graduate students from the School of Journalism, Annette Wilkinson and Chuck Thorp, did a great deal of the really hard work: interviewing, haunting the halls

of the library, etc. Many technical consultants were employed. From the Childrens Television Workshop - Edward Palmer and from Michigan State University - Bill Farquhar.

The greatest thanks of all must of course go to the administrators, teachers, and students of Georgia's public schools. They gave unselfishly of their time and energy and really deserve the credit for whatever is "good" about the project, model, results and reports.

Chapter 1

INTRODUCTION AND SPECIFICATION OF THE PROBLEM

NATURE OF THE PROBLEM

It has long been acknowledged that instructional television will never replace the teacher. It is now becoming increasingly apparent that the teacher will never replace instructional television. The case for ITV has not always been so strong or clear (Palmer, 1970). In the early days of ITV efficiency in terms of reaching large numbers of students was the major justification for its existence. Since those days, however, we have increased enormously our knowledge of how to "use" the medium. We have learned to increase that participation, involvement and completion evident in what McLuhan terms the "cool medium" (McLuhan, 1964). There are some tasks and activities that can best be handled by ITV rather than through the application of traditional classroom methodologies. A brief list of some of the advantages of ITV suggested by Henderson (1967) support this point:

ITV can

- ... make available exemplary teaching to large numbers of students and teachers.
- ... supplement offerings of small schools with limited budgets or available talent.
- ... allow for more efficient use of facilities by its application in large class instruction.
- ... vitalize the teaching-learning process by bringing home the immediacy of a concept or event by giving each student a "front row seat," particularly with live broadcasts.
- ... make available to all expensive, inaccessible and difficult to replicate experiments or demonstrations.
- ... provide uniform and standardized educational experiences with a single tape broadcast into may classrooms.

There are, in addition, other technical ways in which television through the use of tape outstrips one of its chief competitors, film.

There are, of course, some distinct disadvantages to the use of ITV.

ITV cannot

... be well adapted to individualized instruction in its present state of development.

... be as flexible in scheduling and timing of learning experiences as might be desirable.

... insure as much student participation as might be best for learning.

... be as flexible relative to choice of content and goals by virtue of the standardization and control (to some extent) of curricula.

In the final analysis, however, a well conceived and implemented telelesson and series provides benefits which far outweigh the debits. But how effective is educational television in the State of Georgia?

SPECIFIC PURPOSES OF PROJECT

The specific tasks of the project were for the most part set forth in the contract between the Georgia Department of Education and the University of Georgia. Project activities were monitored by the GDE Division of Planning, Research, and Evaluation. The following list of tasks are in approximate order of effort and importance as viewed by the project staff. The Georgia Television Evaluation Project was to provide:

1. A model to evaluate the production and effectiveness of an ETV series.
2. A model for the development of instruments and data gathering procedures.
3. Statistical designs for analyzing and interpreting data.

4. A field test of all prototype instruments and data gathering procedures.

5. A model for continuous evaluation of the GETV Network after the initial assessment studies have been completed.

6. An estimate of cost factors and personnel requirements for operating an evaluation system.

7. A model for the evaluation of the total impact of Instructional Television.

8. A model for evaluating the total impact of the Public Broadcasting segment of Educational Television.

This effort is not a research exercise in the usual sense of employing elaborate sampling procedures, complex statistical design and analysis procedures. It is an exploratory and development effort aimed at outlining the major dimensions of a statewide educational television evaluation.

NEED FOR THE PROJECT

How effective is television as an educational medium? The need for the present project is predicated on the lack of (1) available hard data to assist in making the multitude of decisions about the operation and effectiveness of Georgia Educational Television, and (2) any long term and continuous data gathering design. It would perhaps be imprudent to approach educational television evaluation with the question, "Is it good or bad?" Under well defined conditions with certain kinds of students viewing in particular schools or homes with selected teachers and administrators it is both good and bad. This is not to beg the question, but merely to point out that it is impossible to specify the universe of situations where television may be employed. The more important question is, "Is educational television effective?"

It was the intent of this project to develop a model and methodology that might answer such a question.

As used in this report the term evaluation refers to the systematic use of data gathered through formal means to make value judgements (Stufflebeam, 1968). With regard to the present project we are concerned with developing methodologies for the collection, organization, analysis and reporting of information bearing on the effectiveness of the educational television network in the state of Georgia. The kinds of decisions to be generally made are the following:

(1) Planning - Specification of the domain, major goals and specific objectives to be served

(2) Programming - Specification of procedures, personnel, facilities, budget and time requirements

(3) Implementing- Specification of activities related to directing programmed activities

(4) Recycling - Specification of data related to terminating, continuing, evaluating or drastically modifying activities

It is intended that ultimately a model can be provided which will economically yield data useful in making the above four types of decisions.

GENERAL OBJECTIVES OF GEORGIA EDUCATIONAL TELEVISION

In order to evaluate the effectiveness of a television network, information regarding intent, goals, and objectives is needed. Unfortunately, these data were not available until toward the close of the project. They nevertheless provided some guidance. An abbreviated listing of the major objectives of GETV grouped into four broad categories follows.

Influence the Intellectual and Personal-Social Growth, Development, and Learning of Students

GETV will:

1. Provide effective modern foreign language instruction
2. Provide effective physical education instruction
3. Provide effective relevant instructional music programs
4. Provide effective early childhood education programs
5. Provide effective relevant mathematics education programs
6. Provide effective relevant science instruction
7. Provide effective relevant social studies instruction
8. Provide effective relevant language arts instruction
9. Provide selected programming adaptable for use by special educational groups (e.g. gifted, slow-learners, etc.)
10. Provide selected programming aimed at developing appropriate personal-social skills

Significantly Influence the Knowledges
and Instructional Skills of Teachers

GETV will:

11. Provide effective in-service education for teachers in modern mathematics
12. Provide effective in-service education for teachers in the language arts
13. Provide effective in-service education for teachers in the physical and biological sciences
14. Provide effective in-service education for teachers in the social sciences

Significantly Influence the Maximum Utilization
of Educational Television Broadcasts

GETV will:

15. Provide adequate administrative and production facilities
16. Provide adequate signal to all schools
17. Provide teacher with appropriate schedule information and teaching aids
18. Provide assistance to local schools and teachers in developing experimental programs and implementing CCTV.
19. Provide assistance to teachers, curriculum directors, supervisors, and administrators in effecting maximum utilization of series and individual telelessons
20. Assist colleges and universities in integrating ETV utilization skills in their teacher training programs

Significantly Influence the Educational, Cultural, and
Recreational Awareness of the General Adult Population

GETV will:

21. Provide public affairs telecasts
22. Provide cultural enrichment telecasts
23. Provide educational programming aimed at particular sub-audiences (e.g. adult illiterates, specialized avocational interest groups, school drop-outs, vocational training and retraining, agriculture, etc.)

24. Provide an efficient communication system adaptable for Civil Defense purposes.

It is obvious that objectives for a television network cannot remain static. Society and its needs are ever-changing. Therefore the objectives must change. A good example of how society's changing needs are dictating a revamping of educational requirements is documented in the recently published Goals for Education in Georgia - a report of the Advisory Commission of Educational Goals (Advisory Commission, Georgia Department of Education, 1969).

How have these objectives been implemented? To gain some perspective on the nature and extent of educational television services in the state of Georgia a brief description of the development of the system will be presented in the following section, and in the section following that a verbal picture of the network today.

DEVELOPMENT OF GEORGIA EDUCATIONAL TELEVISION SERVICES

Perhaps the most succinct approach to a description of the development of educational television in Georgia would be through a review of important dates.

1952 - The Federal Communications Commission said, Let there be educational television throughout the land.

1958 - And so it came to pass, work began on a statewide plan for ETV in Georgia.

1960 - Initially as an independent activity WGTV, the University of Georgia station began broadcasting. Later WGTV became an affiliate of GETV.

1961 - The first broadcast of a GETV station, WXGA, a VHF station in Waycross.

1963 - Enabling legislation was passed. The Act stated that:

> The State Board of Education is authorized and empowered to make available educational programs through the medium of educational television. The State Board of Education is authorized and empowered to own, operate maintain, and manage television stations, transmission equipment, and all other related equipment and facilities, both audio and video for the production and transmission of open and closed circuit telecasting; to furnish schedules, consultative services, teacher aids; and to perform all other things necessary in promulgating, furnishing, producing, transmitting, and making such programs available; and is authorized to enter into agreements with other agencies, persons, firms, or corporations for the production and/or transmission of educational television programs.

1964 - Educational television given appropriate consideration in Minimum Foundation Programs for Education.

1965 - Interconnect of WGTV (University of Georgia), WVAN, WXGA, and WJSP (first UHF station) completed. Simultaneous broadcasting from single origination now possible. GETV truly became a network.

1968 - Present network completed (ten stations) with dedication of WDCO in Cochran.

1970 - Dedication of multi-million dollar facilities of Georgia Educational Television Services.

Initial programming on GETV was concerned with Spanish, Science, Mathematics and Music. Series in these areas were aimed primarily at elementary and junior high classes. Also available during the early years of broadcasting were in-service programs aimed at teachers to assist (1) their use of specific telelessons and series, and (2) in improving their knowledge of specific subject matter, and teaching skills.

THE GEORGIA EDUCATIONAL TELEVISION NETWORK TODAY

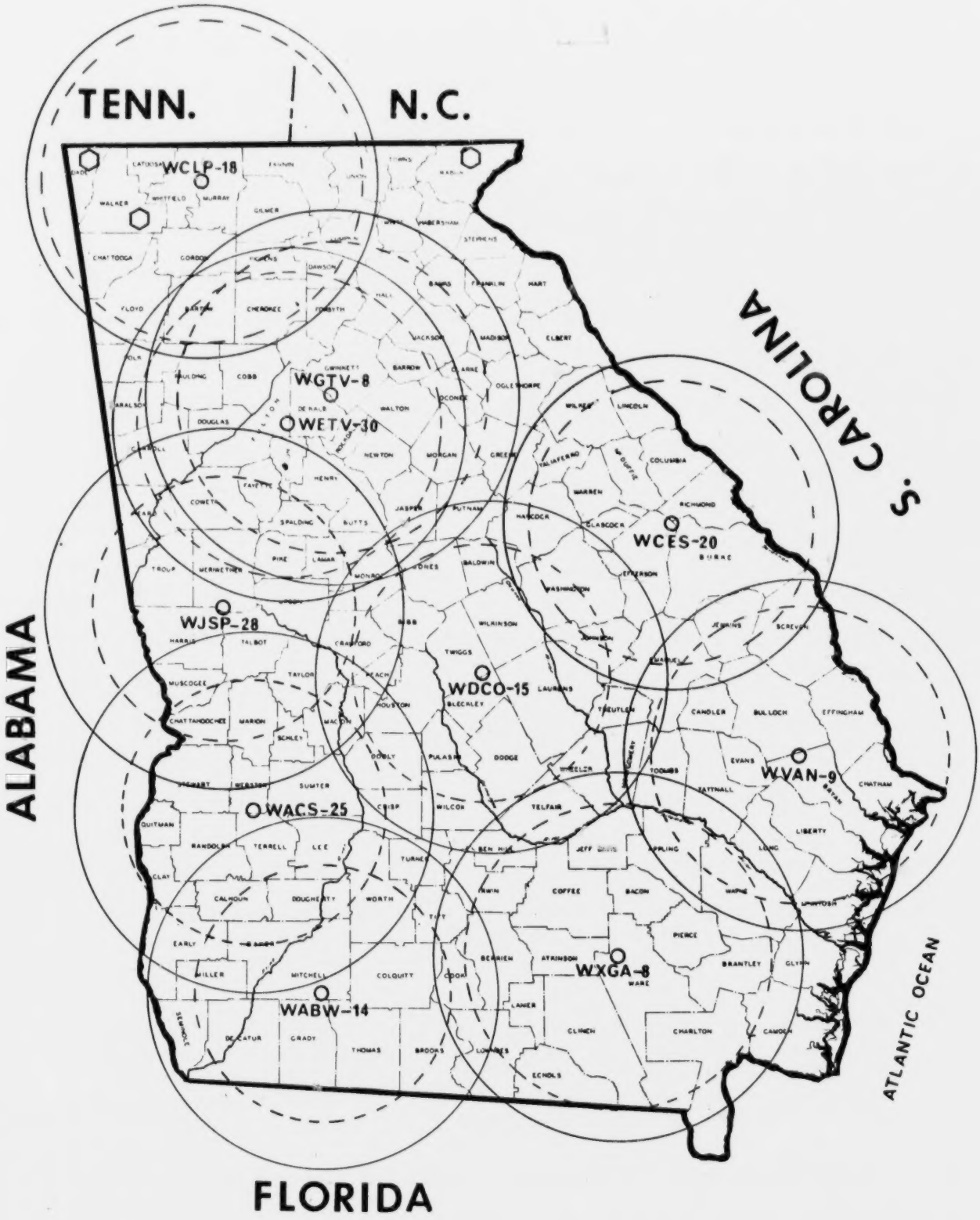
There are three licensees for ten educational television broadcasting stations in Georgia. The University of Georgia operates WGTV, Channel 8, which broadcasts from Stone Mountain, 16

miles east of Atlanta. WETV, Channel 30, Atlanta, is licensed to the Atlanta City Schools. Eight more stations covering all but three per cent of the population of the rest of the state are licensed to the Georgia State Board of Education and operated by the Georgia Department of Education. These eight are: WABW-TV, Channel 14, Pelham; WACS-TV, Channel 25, Dawson; WCES-TV, Channel 20, Wrens; WCLP-TV, Channel 18, Chatsworth; WDCO-TV, Channel 15, Cochran; WJSP-TV, Channel 28, Warm Springs; WVAN-TV, Channel 9, Pembroke; and WXGA-TV, Channel 8, Waycross. A map showing the location of these stations and their approximate spheres of influence can be found in Figure 1-1. In addition more than forty Georgia communities have commercially owned Community Antenna Television (CATV) systems. The majority of these CATV operations receive the Georgia Network programs to provide them to their subscribers. Some CATV owners supply cable service to public schools without charge as a public service to their community.

Single TV signals travel in straight lines; their reception can be difficult in mountainous terrain. In an attempt to reach public schools in difficult areas the Network has constructed translators, devices engineered to receive a TV station's signal on one channel, amplify it and re-broadcast it on another channel. Three of these signal boosters recently were constructed by the Georgia Educational Television Network in the north Georgia communities of Clayton (Channel 12), LaFayette (Channel 17), and Lookout Mountain (Channel 83). The Department is investigating the possibility of establishing additional translators.

The Georgia Educational Television Network is one of the nation's largest state-owned interconnected ETV broadcasting systems. A survey in 1969 revealed that there were approximately 625,641 students viewing at

FIGURE 1-1



Translators

Estimated 90% Signal Saturation (Class A Coverage)

Estimated 50% Signal Saturation (Class B Coverage)

least one series, 22,044 teachers using one or more series, and 13,399 television receivers in the schools. In addition it has been estimated that on an average day upwards of 250,000 viewers avail themselves of at least one of the late afternoon and evening offerings of WGTV.

One indication of the importance placed on educational television in the state rests on legislation aimed at quality control in its schools which is tied to "standards." General standards for Georgia schools compiled as a result of the 1964 Minimum Foundation Act list items as "Required," "Essential," and "Desired." In order for a school or school system to be declared standard, all required items must be met, and a certain percentage of essential and desired items must be in effect. The 1970 Standards include the following guidelines:

Required

The system has a written plan for the utilization of educational television. This plan includes the following:

1. Basic statements about the relationship of educational television to the instructional goals of the system.
2. Projections for securing and maintaining adequate facilities for ETV.
3. Methods of correlating the local curriculum with television offerings.
4. Identification of local personnel who are responsible for coordinating local ETV utilization efforts, e.g. ordering manuals, compiling surveys, and implementing the system's plan in individual schools.
5. Procedures for involving local administrators, instructional personnel, teachers, the engineering and the utilization staff of Georgia Educational Television Services in developing and implementing this plan, e.g. administrative planning sessions, orientation meetings for new teachers, in-service meetings.

All teachers using ETV have been provided with the necessary schedules and manuals. (Individual teachers must be able to show these materials if requested.)

Essential

The building is equipped for educational television with the necessary outlets to make educational television available to all indoor instructional areas.

Desired

The school has a functional master antenna system for ETV.

The school has availed itself through workshops and/or individual school visits by the ETV Utilization staff or other methods of communication, the services of the ETV utilization staff.

It is obvious that the use of classroom television programming is viewed as an integral part of the instructional programs of Georgia schools.

No Georgia telecourse is designed to replace a classroom teacher; rather they are created to serve the function of a team-teacher. Each lesson is an intensified program developed with the advice of a committee composed of national, state and local authorities in the field. The aired lesson is the result of efforts of the studio staff including a TV producer, artists, film animators and cameramen, scenic designers, researchers and engineering personnel. The planning, development, effort and production of the Georgia Educational Television Network telecourses have gained extensive national recognition. Several whole telecourses have been bought for national distribution. The majority of the network's in-school and in-service programs are produced in the Georgia ETV Production Center in Atlanta. In addition series from other sources, particularly National Instructional Television, are used. WGTV also produces many of its own broadcasts and in addition relies on the offerings of National Educational Television.

The key to effective use of telecourses in the classroom situation is the classroom teachers' skill in utilizing the series. To help teachers, a division was developed within the Georgia Educational Television Network aimed at providing guidance, materials and services which would increase effective application of the medium. The utilization staff, which numbered 15 people in January 1970, helps the teachers in local systems to adequately utilize the GETV series in their classrooms.

The original emphasis of the utilization staff was on-the-job selling of the equipment and teachers on using television in their classrooms. As the teachers began utilizing the equipment and the staff grew, the utilization people began going into schools to meetings, workshops, and institutes. Now, their concentrated effort is focused on showing the teachers how they can build their schedules around ETV and how it can be incorporated into their present schedules.

The utilization staff has two divisions. One group is involved with program planning and curriculum, while the second group goes into schools, talks with teachers, and conducts meetings about the proper utilization of educational television.

DEFINITION OF TERMS

Not only should a set of definitions assist the reader in making sense of what is to follow, but in addition will provide a perspective of what we are about. Terms used in the report may take on meanings other than those usually associated with them.

Closed Circuit Television (CCTV): A system of direct broadcast from camera to receiver, by-passing open-air transmission and reproduction, and usually carried by cable.

Communique: A half-hour service, after school, broadcast service for teachers featuring the series television teacher previewing future lessons. Generally two to five lessons are previewed. Broadcasts emphasize lesson content, teacher presentation methods, discussion topics, and suggested post-program activities.

Educational Television (ETV): This term has come to cover two relatively distinct communication functions: (1) instructional television-directed at students in the classroom or otherwise in the general context of formal education, and (2) public broadcasting which is directed at the general community.

Field Test: A technique used in evaluation in which procedures and methodologies are tried out in a setting and with subjects as closely approximating the target group and setting as possible. As contrasted to the pilot test, field testing is (a) less laboratory like, (b) more comprehensive, and (c) more complex. In the case of the present project examples of field testing would be the try out of the questionnaires used to survey teachers about their ITV attitudes and practices, and student attitudes toward ITV.

In-Service Program: Usually a non-credit series aimed at improving teacher knowledge and skill in her area of competency. Weekly broadcasts typically cover subject matter areas of reading, English, and oral and written compositions.

Instructional Television (ITV): The in-school educational broadcasting generally week days from 8:30 a.m. to 3:00 p.m. covering subject matter contemporary with school curricula. Series in the form of articulated programs (usually 33) run from 15 to 30 minutes. Major portion of programming is aimed at elementary school.

Manual: Publication produced by GETV and available upon request by teachers covering full years programs for a specific series. Manuals contain lesson objectives, pre- and post-program suggested activities for students, and reference reading for students and teachers, materials and vocabulary lists, and overview of program content. Programs are cross-referenced to state approved textbooks.

Model: A scaled paradigm representing the total operation of a particular larger system under investigation. In the present study, the model refers to a paradigm describing methods and activities useful in continuous evaluation of the Georgia Educational Television Network.

Patterns Teleseries: (See Series)

Pilot Test: A procedure used in evaluation to establish feasibility of using specific method or instrument with a small group in a highly controlled situation. Comes before field testing and usually has more limited objective.

Program: Generally refers to that 15 to 30 minute broadcast, usually once a week, covering relatively limited number of instructional objectives.

Public Broadcasting: Programming basically made up of cultural, children's, public affairs and other single purpose telecasts. Programs may be broadcast on continuing or one short basis from about 4:00 p.m. to sign-off around 10:30 or 11:00 p.m.

Series: The complete collection of articulated instructional programs (generally 33 to a series) in a particular subject area aired during the course of an academic year in a sequented fashion. Series parallel most academic disciplines currently used in the classroom.

Two series came under intense scrutiny in the present project. These were a second grade social studies series Wonderful You and a sixth grade math series Patterns.[1]

Wonderful You - Grade 2

The major objective of this social studies program is to guide the child toward a better understanding of what is human about man and how he can become more so. Five forces which shape man's humanity suggested by Bruner are touched on. Namely, tools, education, language, man's urge to explain and to interpret his world, and social organization. Concepts, attitudes, and skills are considered. The interdependence of man will be stressed. Specifically evaluative research efforts involved Lesson 32 "Planning More Human Communities," and Lesson 33 "Let's Build for Tomorrow Today,"

Patterns - Grade 6

This "discovery" oriented approach to basic mathematics encourages student creativity and classroom participation. It is designed to help the student develop logical thinking patterns progressing from observing, guessing, andgeneralization to predicting mathematical events. Specifically the following lessons were evaluated: Lesson 30 - Volume I, and Lesson 31 - Volume II.

Teacher Aid: (See Manual)

Telelesson: (See Program)

Utilization: As used here utilization means effective integration of

[1]A list of student and teacher objectives for both these series can be found in Appendices K, M, O, and Q of Volume II.

ITV programs into curriculum. Unfortunately little qualitative data were gathered during the initial stages of evaluation and the staff had to rely primarily upon frequency of reported use as an index of utilization.

Wonderful You Teleseries: (See Series)

LIMITATIONS

Again it should be emphasized most emphatically that the efforts here reported were exploratory. The usual rigorous criteria applied to research are not legitimate in the present case. Only field and pilot tests were run. The data were for planning, refinement and modification of instrumentation. Data useful in making generalizations about television in the state were not gathered.

As with most projects of this type time was a severe limitating factor. This was particularly true in this case as the problem was not and really could not have been delineated from the beginning. Time was also a factor because of the need to get into the schools, it being only weeks from summer vacation. Timing in the public survey was probably poor due to closeness to income tax deadline and civil disturbances in various locations throughout the state and nation. It is necessary, however, to note several specific limitations of the present efforts. These are:

1. Failure of school and teacher survey of ITV practices and attitudes to truly represent the state.
2. Extremely low return of public broadcasting survey questionnaires.
3. The usual shortcomings of self-report measuring instruments. In the present case questionnaires and rating scales.

4. Lack of any control over content and methods of teachers involved in the Patterns and Wonderful You experiments.
5. Insufficient training of classroom observers.
6. Failure of Wonderful You and Patterns series, both the programs and communiques, to represent the major types and quality of GETV programming.
7. Possible bias in public broadcasting survey due to sampling limited to large metropolitan areas via telephone directory lists.

ORGANIZATION OF REPORT

Two documents will be used to report the finding and recommendations of the project. In Volume I the activities directly involved with developing the evaluation model itself are described. Volume I is divided into six chapters. After the problem area, purposes and characteristics of the network are specified in the first chapter, a brief overview of the research literature is presented. This summary is followed in Chapter Three by an overview of the research and evaluation activities. The model itself appears in the fourth chapter. Chapter Five contains recommendations resulting from feasibility studies. The volume concludes with a summary and suggestions for future research. The four chapters of Volume II contain summaries of the research studies conducted during the development of the GETV Evaluation Model. Specifics with regard to sample characteristics, statistical analyses, instrument development and try out, etc. are to be found here.

Chapter 2

A BRIEF REVIEW OF EDUCATIONAL TELEVISION RESEARCH LITERATURE

During the last two decades in which the influence of television has made impact on the American public, the concurrent development of educational television has had significant and specific impact on children. From the 400 or more major studies evaluating the effects of educational television, several generalizations may be made.

INSTRUCTIONAL TELEVISION AND LEARNING

Student Achievement

The introduction of ITV Lessons into the classroom has the possibility of improving or maintaining current levels of student achievement.

In one of the largest projects evaluating educational television (Hall, 1962) the sample of 30,000 elementary and secondary students benefited from instruction in the following areas: Spanish, music, art, science, literature, history, safety, English, civics, and biology. Comparisons were made in this study between television and face-to-face modes of presentation. Analysis of achievement scores relative to the pre-test performance of the student indicated there were no significant differences in the results in elementary schools, or between a television method of teaching and conventional face-to-face methods in secondary schools.

Achievement of pupils relative to number of successive years of exposures to educational television indicates that learning increased in proportion to the length of TV use. These results (Morgan, 1963) were observed with both rural and urban students, with greater gains being made by the rural groups of students.

Some indication seems to be present that academic achievement with ITV is dependent on activities which follow the television presentation; i.e. supplementary lessons following programs. Other factors influencing effectiveness and achievement and the student interest are: pacing of lessons, opportunities for student participation, variety, and relevance of materials (Himmler, 1957). Attitudes of teachers quite strongly influence the overall affect of the medium on pupils. Enthusiastic teachers are likely to have students with higher interests for television as well as comparable or better achievement scores than conventional face-to-face classes.

A significant point regarding science (and other academic areas) is outside the realm of academic achievement. Based on the direct comparison between ETV and face-to-face groups, it has been shown that ITV achievement scores do not seem to yield higher measures than face-to-face methods, nor do retention, interest, or attitude scores seem to vary greatly across the teaching methods (Amiran, 1963). There is some indication that measured achievement on standardized tests not designed around the telelesson specifically is higher with television presentation (Jacobs & Bollenbacher, 1960). This phenomenon may be explained by the programmed nature of some presentations with immediate feedback of "right" and "wrong" answers.

Student Attitudes

Instructional Television has emphasized heavily the assessment of attitudes of students and teachers. These attitude studies vary greatly. In some studies students have been negative to Instructional Television; in others the student opinion has been very favorable; many studies present neutral opinions.

The U.S. Department of Health, Education, and Welfare's 1967 Research activities in Instructional Television indicates "students' opinions are most probably a function of the attitudes of their teachers, or of the quality of the instruction presented to them by means of television, in most cases it would appear that students' attitudes have not been a serious barrier to the use of instructional television (p.12)."

Most student attitude studies toward ITV found little or no relationship between attitudes toward or specific preferences for various modes of instruction and actual achievement from these methods.

Schramm's (1962) investigation of student attitudes toward Instructional Television indicated grade school children think they learn more from television than do high school and college students. In lower grade levels attitudes are generally favorable or unfavorable to the entire range of programming. As grade level increases, attitudes become specific to individual programs and categories of programs.

ITV AND THE CLASSROOM TEACHER:
IMPACT ON KNOWLEDGE AND METHODOLOGY

Many comparisons have been made with teachers and students involving all elementary and secondary school subjects, attitudes of teachers, methods of ITV presentation, size of classroom, and effects of performers. The key variables in such studies generally relate to the impact on knowledge, or achievement in the case of the student and upon attitudes in the case of the teachers.

Underhill (1969) found that teachers using ETV are generally poorly trained and relatively inexperienced in the area of ETV use - a fact compounded with the indication that these very teachers are not given

enough help in proper use of ETV. Many schools are poorly equipped to handle ETV. Television series produced fall short of the expectations that teachers have for ETV.

A good teacher may teach effectively with television. Not all useful activities, however, can be treated by television. Illustrative of some problem areas are: discussion, laboratory work, theme writing, and home work. However, "to the extent that teaching goes on by means of lecture and demonstration, then television has an unequaled ability to share the best teaching and the best demonstrations (Schramm, 1964)."

The patterns of use of ITV are presently supplementary to currently operating academic programs in many schools and in some cases complementary and integrative, also speculative conclusions and implications seem to indicate the role of the classroom teacher is little affected by the introduction of instructional television under prevailing conditions. The patterns of ETV use are currently conventional. Use patterns actually employed by ETV classroom teachers seem to differ considerably from pattern-nonparticipating teachers think they would employ. Fears and misconceptions that nonusing teachers have regarding instructional television, however, seem to disappear when their experience with the medium is increased. Users of ETV are generally more favorable to both instructional television and newer educational media than nonusers of ETV (Underhill, 1969).

Attitudes

Teacher attitude, clearly in the positive direction in most studies, serves as an additional teacher influence or use of ITV. Also, in the area of controversial topics, ETV offers the instructor an opportunity to expose children to controversial topics with which the teacher is

reluctant to deal: examples include communism, sex education, and other related controversy (Culver, 1967).

Teacher attitudes towards educational television are colored by the fact that TV is generally considered entertainment. This fact obviously influences it as an instructional medium. It is already clear that children's learning should be integrated with their experiences and their environment, so that what they learn in one environment has meaning and relevance in their experience of the other. Teachers and evaluators are concerned that TV and school should not be separate (Kuhns, 1968).

Further attitudes toward ETV are concerned with "reteaching" -- that is to say, having the teacher elicit the same material from students that the television teacher has just presented. Klasek (1967) feels teachers should avoid followup instruction of reteaching. Followups should be geared to activities which will assist children in understanding concepts and to allow them to form their own generalizations. Good teachers already do this; poor ones do not.

Freeman (1967) redirects teacher attitudes towards educational use of TV from a passive response or timekiller to a flexible tool within the system of instruction. In order for the medium to be efficient from theoretical standpoints (and from practical ones), the establishment of specific educational objectives is a mandatory part of the use design. The preparation of specific educational objectives has within its model the necessity of continuing through such a plan with direct observation of students (Orr, 1966). These behavioral objectives further require the preparation of explicit rationables for the measurement of each objective according to some kind of plan or general outline. Development, tryout and revision of standard, quantitative and objective measuring instruments

for the assessment of behaviors relevant to the particular behavioral objectives is further seen by Orr to be necessary.

The factor of protective security in educational television offered to inexperienced or less qualified teachers is one reason why these individuals seem to report favorable attitudes. Comfort is derived from the reliance on another teacher assuming academic responsibility (Westley & Jacobson, 1963).

Based on a review of a large number of studies it appears that languages are among those subjects most effectively taught by ETV. The teaching of Spanish, French, German, and Russian have all been researched with conclusions that aural-oral skills may be taught well with ETV. The important point with regard to languages is the inclusion of a master teacher with unusual skills and presentation abilities (Alabama, 1961; Coleman, Dutton & Bookout, 1960; Gordon, Engar & Shupe, 1963; Spatagore, 1969).

GENERAL IMPACT OF ITV

FACTORS INFLUENCING ITV EFFECT

Students of languages have indicated that it was easy to learn by television because they had to listen more carefully and respond actively in a programmed fashion -- adding structure to the classroom method of instruction on the face-to-face basis (Silagyi, 1961).

Active responding of students to the television teacher, as in the study of languages, has been found to be important in science instruction. Sciences are particularly amenable to good ETV instruction due to the fact that elaborate laboratory presentations may be performed without flaw, and that school systems without their own laboratory materials may effectively participate in a science program at levels which they would not otherwise

enjoy. Science, sometimes a dull subject in conventional settings, can be stimulating enough to spur student interest. Attitudes with respect to science programs are more favorable after the series has been completed (Schlaak, 1956).

Negative attitudes towards educational television are not unusual or unexplainable. Chiefly fear of mechanization, fear of the ETV teacher becoming unimportant, lack of student feedback, and distrust of measuring instruments and researchers are all certainly to be considered (Handleman, 1960).

Parental attitudes regarding ETV are similarly important in an overall study of effectiveness. Clarke (1965) found that youngsters whose parents placed more importance on "doing well in school" rather than "being curious about things" seemed to do less well from the achievement standpoint and were less likely to watch ETV meaningfully and less likely to respond its social rewards.

Organizational climate in the schools, a factor influencing utilization of ITV, presents several topics for consideration: administrative leadership, administrative attitudes, and administrative knowledge of television facilities.

Planinc (1967) investigated the above topics and found that administrative leadership was the most important feature in ITV utilization. It was also apparent administrators as a group received but did not absorb information relevant to ITV. Attitudes and interest of administrators and others (teachers) are directly a function of knowledge of the medium. Another factor affecting utilization included individual school facilities for the reception of ITV.

Wade (1965) summarized guidelines for administrators for the adoption

of ITV and reported that these personnel should be aware of which programs and grade levels would be receptive to efficient ITV usage. Also the administrator should be aware of the particular effectiveness of small class viewing as well as large group viewing. (No significant differences in achievement are currently reported in large vs. small classes.) Also, the administrator should, if felt necessary, be prepared to change the organizational climate of his school chiefly by informing, teaching, persuading, and motivating his staff towards the idea of television in the school.

La Penna (1967) discussed the design, implementation, and evaluation of a model program for in-service training dealing with ITV utilization. He found that teacher attitudes changed significantly in favor of instructional television after in-service training.

The obvious importance of the concept of feedback is a frequently mentioned topic in the literature (Clarke, 1965; Culver, 1967; Diamond, and programmed stimulus-response instruction are topics included in such a design. Since "the utilization of television begins and ends with the student (Culver)," the student is quite obviously the determining force in the total instructional program. Loss of sight of this facet of educational television is not allowable. Critiquing sessions need to be developed for each television series involving all personnel involved: production to the student himself. In this manner ETV is seen as a learning medium rather than simply a teaching medium.

Examining the feedback studies on ETV, it becomes apparent that a major issue encountered by researchers is the lack of precise differentiation among the various forms of feedback. (Greenhill (1964) examines feedback from information theory standpoint which indicates the receiver

communicates back directly to the communication source. In ETV this is not possible. Zettl (1967) carries these ideas into a direct classification scheme outlined briefly as follows: direct feedback (viewer reacts directly to the communicator); direct immediate feedback (viewer asks the teleteacher questions during the show); direct delayed feedback (student waits until end of telelecture to respond to the communication source); and various models for indirect feedback which are currently the only practical way to monitor student and teacher reactions from the standpoint of practicality.

> Without a precise classification of the various types of television feedback studies which claim to measure the effect of feedback against no feedback, we may actually compare merely one type of feedback against another type of feedback...A reclassification of television feedback into several distinctive types may help the researcher to construct more precise research designs that actually measure what they set out to measure, and it may also help the program originators to produce more effective programs (Zettl, 1967, 936).

Lesson manuals of the type currently available for use with particular series which specify content seem to be one means of improving feedback. Chabe (1962) found ETV viewers with lesson guides were almost twice as efficient as those without the guides.

Feedback is an important variable for both learning efficiency as well as upgrading the particular television series. Lack of precision of feedback is definitely an issue with the medium.

The effects of class size investigated appear to conclude that there is no appreciable difference in students in elementary, secondary, or college levels. Carpenter and Greenhill (1958) concluded there was no effect on learning and student attitudes in small or large classrooms. Driscall (1959) found no differences in final examination scores for

candidates for the degree in elementary education who were enrolled in a course of introduction to education. French (1963) similarly found no differences in large classes over small with respect to scholastic aptitude, grade point average, and age. Rothchild and Lastinger (1961) present the most convincing argument for the lack of relationship between class size and achievement. In their West Coast study in Florida, with an N of approximately 7,000 students at elementary and secondary levels, it was concluded that students learn as effectively in large classrooms with ETV as students in face-to-face classrooms.

Differences do exist within students with regard to intelligence. Both the dull and the bright profit from face-to-face instruction (Englehart, Schwachtgen, and Nee, 1958; Gordon, Engar, and Shupe, 1963). Englehart, et. al. feel that the students with IQ's above 120 and below 100 profit from face-to-face instruction. Gordon et. al. found the challenge to superior students was not sufficient under television modes of presentation to maintain their interest over a period of time.

A further factor influencing ITV effectiveness is mentioned by Howell (1968) regarding in-service training. This type of training is sometimes (1) directed to the school staff by television, (2) conducted in workshops, or (3) conducted by observation of a television master teacher. Curriculum guides are also employed in such methods as in the case of the science programming in New York and Georgia.

Communique programming, a useful adjunct to the in-service training employs a television teacher previewing curriculum guide study materials with viewing teacher prior to the classroom teachers' use of the lessons with her own students. This approach may be of potential positive significance in educational television.

Research and development activities pursuant to the goals of ITV frequently are of the opinionnaire type used by Educational Networks (National Educational Television Survey, 1969). Such research activities, summative in nature, sample audience feelings in frequency of viewing ITV, programming preferences, characteristics of the viewership, and suggested changes in programming.

These feedback data collected from research and development activities are often quantitative, but more importantly are behavioral investigations with general and specific educational implications.

It is safe to say that good teachers can teach effectively with ETV, that his role is little affected in general by its introduction to his classroom. Utilization of the method, however, is a variable which appreciably affects the effectiveness of ETV. Students appear to learn as well or better in ETV classes as they do in face-to-face situations. Certain areas of specialty appear to be enhanced with the introduction of ETV due to the quality of the presentation as well as standardization. Many negative aspects result not from lack of student academic achievement, but rather from personal attitudes on the part of the teacher in the classroom, or the inability to schedule programs at suitable times. All levels of personnel are ultimately involved in a school system.

PUBLIC BROADCASTING

Public television broadcasting is that aspect of educational television which serves chiefly the adult needsof the community through the medium. The National Instructional Television Center (1969) outlined some of the general features. First, public television assists population to perform new social tasks and to assume new social roles. Also public television allows adults to continue learning through specific educational

objectives and programming. Second, public television is a unique resource in the society for carrying on self-criticism.

Participants in public television often include (1) adult learners, (2) educational institutions, and (3) financial agencies. In terms of content, the medium offers adults practical rather than academic information; applied rather than theoretical; and skills rather than knowledge or information.

Categories of programming often include the following: vocation, hobbies, recreation, religion, public affairs, agriculture, and personal-social development. The above categories collapse into three general categories: cultural, public affairs, and informal adult education.

Transmission in public television programs usually occurs through cooperation with local and state educational television networks in addition to VHF-UHF television stations composed of commercial and public broadcast stations. Attempts are frequently made to beam broadcasts to areas where reception is inadequate for major network programming.

The relationship between continuing education programming and other major programming categories of public broadcasting are difficult to discern. Instructional television is directed at classroom students; public television is directed at the general community (The Report and Recommendations of the Carnegie Commission on Educational Television, Public Television, Harper & Row, 1967). The Carnegie Commission believes that public television should present "all that is of human interest and importance which is not at the moment appropriate or available for support by advertising, and which is not arranged for formal instruction (p. 1)." Programs not arranged for formal instruction belong within public television. Instructional television is considered a separate domain.

Schramm (1963) summarizes some of the implications of public educational television. He found that approximately 10 - 24% of the adult population watched ETV regularly; the composition of this audience is abnormally high in professional and white collar categories. This audience already has the opportunity for education, and regards ETV as culturally satisfying rather than "fun." Schramm (1962) also mentions there is no "average" audience but rather groups of viewers who vary with the kinds of programming and with local educational and cultural levels. Reaching broader spectrum of the general population still remains a problem of ETV. Financing also remains a problem, a variable not so pressing in commercial television. ETV is also regarded as a distinctive medium whose future rests partially in providing its own writers, technicians, and talent.

Chapter 3

BRIEF OVERVIEW OF PROCEDURES

The procedures used in the development and establishment of the evaluation model are summarized in this chapter. The procedures used in this study were largely inductive in nature and have resulted in a product that is applicable to the overall evaluation of a state educational television network. Volume II of this report contains a more detailed report of the research that was conducted as an integral part of this project.

As per the request of the contractor (Georgia Department of Education) the project staff devoted the majority of its resources to developing a model with particular emphasis on the instructional portion of educational television. However, proportionate emphasis was placed on the public aspects of educational television.

SOURCES OF PLANNING IDEAS

In order to investigate the present status of educational television in the State of Georgia it was considered necessary to interview a sample of personnel engaged in the production, distribution and use of the medium. Initially the staff constructed a list of 80 questions about the use, status, problems, etc. of educational television in the state. Various members of the staff of the Georgia Educational Network responded to these questions. A second series of interviews was conducted with those engaged in the field in the use of instructional television. This group consisted largely of teachers, principals and other selected educational and communications experts.

Teachers and principals were interviewed in 18 school systems in Northeast Georgia, Metropolitan Atlanta and Southeast Georgia. Wherever possible, teachers were observed using instructional television in their classrooms. In general the interview questions centered around the relationship of instructional television to the students and school administrators, supplementary materials available and their use, the utilization of television in school, scheduling problems and the use of communiques.

In order to secure additional information from groups involved in the evaluation of educational television, visits were made to consult with staff members of the Ford Foundation, Childrens Television Workshop, and the National Instructional Television Center in Bloomington, Indiana. Staff members of these organizations made pertinent suggestions with regard to development of the model and for revision of much of the software described later.

Another major source for planning ideas was found in an extensive review of the literature of educational television. This source served as a basis for ideas for the development of software and served also as a beginning point for understanding the processes used in educational television. Chapter 2 of this volume contains a brief review of the literature centering on research related to the evaluation of educational television.

Concurrent with the above procedures, continuing contact was maintained with the staff of the Division of Planning, Research and Evaluation of the Georgia Department of Education. This group provided suggestions and assistance throughout the development of the model.

INSTRUMENT DEVELOPMENT, PILOT TESTING AND REVISION

A major objective of the Georgia Educational Television Evaluation Project was to develop software and a plan for its use, suitable for gathering data relative to the general impact of educational television in the State of Georgia. The instruments developed during this project fall largely into two categories, those that can be used without additional development, and prototype or sample devices. This last group of instruments includes such things as prototype achievement tests and observation schedules. All instruments were developed, pilot tested and/or revised. For purposes of this chapter, these instruments have been grouped into three types; questionnaires related to instructional television, instruments developed in conjunction with evaluation of the effectiveness of instructional television aids, and a questionnaire related to public broadcasting.

Questionnaires

Following is a brief description of the development, pilot testing, and revision of a series of questionnaires designed to assess factual use information, as well as the opinion, educations, feelings and attitudes toward instructional television of five major populations; students, teachers, principals, supervisors or curriculum directors, and parents.

Student Form. A primary concern in the effective use of television in the school, is the attitude and opinions that the consumers (students) have with regard to the medium. In order to investigate the attitudes and opinions of children toward instructional television two questionnaires were developed, one for the lower elementary grades (2nd and 3rd) and one for the upper elementary grades (5th through 7th).

The lower grades student questionnaire consists of twenty questions inquiring into how a child feels about various aspects of television in school. The test is administered as a group instrument with each child responding on an answer sheet by marking a picture of a smiling or frowning face (corresponding to his feelings toward the statement made about instructional television). Items on this questionaire relate to the things that are done before and after the class watches television in school, the feelings each child has for the television teacher, the attitudes of their parents toward television in school and the use of television in the home. This instrument was pilot tested with children in three classrooms of second and three classrooms of third grade students (N=165).

The instrument appears to be a valid and reliable measure of lower grade elementary children's feelings toward instructional television. No revision was made in this instrument. A more detailed explanation of the use and results of the pilot administration of this instrument is contained in Volume II of this report. A copy of this instrument will be found in Appendix B of this Volume.

The upper grades student questionnaire consists of two parts, the first being composed on fifteen yes-no questions. Part 2 contains thirteen completion questions similar to those developed by Perrodin (1966) to determine children's attitudes toward science. These questions centered on the same general areas of interest as the lower grade instrument. This instrument was pilot tested with 89 sixth grade students.

Results of the pilot test indicated that the instrument could be effectively used in measuring children's attitudes toward and opinions about instructional television. No revision was made in this instrument.

a more detailed report of the use of this instrument is contained in Volume II of this report. A copy of this instrument will be found in Appendix C of this Volume.

Teacher, Principal, and Supervisor Forms. Questionnaires were developed for each of three main groups of school personnel: teachers, principals, and curriculum directors and supervisors. The three questionnaires were parallel in construction and designed to gather information about the relationship of instructional television to students and to school administrators; supplementary materials available for use with instructional television; utilization of instructional television, including scheduling problems; use of communiques and certain personal data about each respondent. The teacher questionnaire contained 44 yes-no items, the principal questionnaire was composed of 30 yes-no items and the supervisor questionnaire contained 21 yes-no items. In addition all forms contained a list of sixty adjectives that each subject was asked to mark either yes-or no depending on whether he agreed that that particular adjective was descriptive of instructional television. This list included such words as good, foolish, difficult, expert, wise, etc. In addition, all questionnaires contained eight items of personal information (years of experience, level of certification, etc.) and five free response questions such as what kinds of programs would the respondent like to see aired on instructional television.

The teacher questionnaire was administered to 27 elementary classroom teachers, the principal questionnaire was administered to 37 principals (both elementary and secondary) and 34 curriculum directors and supervisors completed the supervisor questionnaire. Results of these

pilot administrations for principals, and curriculum directors and supervisors are contained in Volume II of this report. The Teacher ITV Questionnaire was then subjected to an extensive field testing (See Chapter 1 of Volume II).

After pilot testing each instrument was submitted to two experienced representatives of the group the questionnaire was designed for, (e.g. the Teacher Questionnaire was submitted to two experienced elementary classroom teachers) for detailed analyses and comments. In addition the questionnaires were submitted for review to the staff members of the Children's Workshop and the National Instructional Television Center. Based on recommendations of these groups and analysis of pilot testings, the questionnaires were redesigned providing each question or statement with a rating scale of 1 to 4 or 5. Many items and questions were eliminated and additions made. The revised teacher questionnaire consists of 62 items, the principal questionnaire 53 items, and the supervisor questionnaire 45 items. Copies of these instruments will be found in Appendices D,E, and F of this Volume.

Parent Form. In order to insure a comprehensive evaluation of the full spectrum of the populations involved in instructional television, a parent questionnaire was developed which contained eight yes-no questions. These questions centered on the knowledge and attitudes that parents had of the use of instructional television in school. This instrument was completed by parents representing 24 families who were in attendance at a PTA Meeting. Complete details of this administration of the parent questionnaire are contained in Volume II of this report. Based on this pilot test, no revision was made in the instrument. Appendix G of this Volume contains a copy of this questionnaire.

EVALUATION OF EFFECTIVENESS OF COMMUNIQUES AND PROGRAM AIDS

The key to the effectiveness of any television system or network must rest on the quantity and quality of utilization and student learning. One may begin with a series or program which, on the basis of pretesting and application of formative evaluative methods, has been demonstrated to bring about appropriate changes in student behavior, but if the program or series is not properly utilized objectives are not met. The Georgia Educational Television Network broadcasts a series of teacher communiques designed to assist the classroom teacher in effectively utilizing television. These half-hour programs suggest methods for preparing students for the telecourses, provide brief overviews of the objectives and content of the telecourses and suggest classroom follow-up activities.

In addition to the communiques, the Network provides program manuals. These publications are designed to provide the classroom teacher with information about the content of each telelesson,as well as the total sequence. These teacher aids provide for the incorporation of audio-visual aids,use of community resources, student research, projects and field trips. Central to each lesson description is the specification of objectives for that lesson and supplementary instructional materials.

In order to assess the effectiveness of these aids the following evaluation was conducted. This evaluation was not aimed at specific programs but was used to demonstrate the feasibility of using the methodology in evaluating the impact on the entire network when changes in the communiques and/or teacher aids are made.

The communiques accompanying the second grade social science series Wonderful You and the sixth grade mathematics series Patterns that were

aired April 6th and 13th, respectively, were chosen for detailed evaluation. The manual materials related to the Wonderful You lessons 32 (aired 5/4/70) and 33 (aired 5/11/70) and the Patterns lessons 30 (aired 4/20/70) and 31 (aired 4/27/70) were also chosen for detailed evaluation. Teachers that were users and non users of these program were identified by the tilization Unit of the Georgia Educational Television Network in cooperation with local school personnel. These teachers were asked to participate in the evaluation of these two series. They were assigned to groups as follows:

Wonderful You
1. View only communique
2. View communique and study manual
3. Study manual only
4. Teacher and students view only lessons 32 and 33. This group were non-users of the program.
5. Control.

Patterns
1. View only communique
2. View communique and study manual
3. Study manual only
4. Control

Teachers in groups 1-3 were asked to teach, utilizing the television lesson as they normally would in their classes. A summary of the sample sizes involved in the studies is presented in Table 3-1.

Communique and Manual Evaluation Forms

In order to provide a comprehensive evaluation of instructional television it was necessary to develop instruments to evaluate both communiques and manuals. After careful examination of many evaluation devices, primarily designed for manuals and a careful review of numerous communiques a 19 item instrument was developed for evaluation of each communique (See Appendix H). Teachers are asked to rate a series of items, about each communique on a scale of 1 to 5 with 0 being used if the item did

TABLE 3-1

Number of Teachers and Classrooms and Students Participating in Pilot Testing of Various Evaluation Forms

	Communique	Manual and Communique	Manual	Classes Only View Program	Control
WONDERFUL YOU					
Teachers	8	7	8	-	5
Students	94	124	44	107	80
Classes (Post) Achievement Test)	4	4	2	4	3
PATTERNS					
Teachers	7	4	7	-	-
Students	218	109	104		124
Pre-Telelesson Observation of Teacher	7	4	6	-	-
Post-Telelesson Observation of Teacher	7	4	6	-	-
Classes (Post Achievement Test)	7	4	6	-	4

not apply to the particular communique. The Communique Evaluation Form can be used with any communique, one form being completed by each teacher for each communique watched. A Manual Lesson Evaluation Form consisting of 20 items relative to any lesson in a manual was developed (See Appendix I). Again teachers are asked to rate a series of questions about each lesson in the manual on a scale of 1-5. A form is completed for each lesson used. In addition a seven item scale was developed that is completed once for each manual used. Items on this scale are rated from 1-5 and relate to the manual as a whole.

Achievement test and observation schedule

Two experienced classroom teachers at appropriate grade levels viewed the tapes of the communiques and lessons and reviewed the manual lessons for both Wonderful You and Patterns. From this review of the materials these teachers derived both teacher and student behavioral objectives. These objectives constituted the expectations of the ways in which teacher behavior (as a function of communique or manual experiences) or student learning should change as a function of having been exposed to these materials.

From the behavioral objectives, achievement tests for the students in the second and sixth grade were constructed. From the behavioral objectives constructed for the Wonderful You communique and manual lessons, a prototype test designed for second grade teachers was constructed.

Based on the objectives derived from the communique and manual accompanying the Patterns series a prototype observation schedule - the Patterns Observation Summary (POS) (See Appendix J) was constructed by the staff of the project and submitted for review to an expert in the field of teacher observation techniques. This schedule consists of the things that a teacher might do in her classroom before or after Patterns!

lessons 30 and 31.

The prototype instruments developed for assessment of student and teacher achievement and for teacher observation are specific for the telelessons in question. The techniques employed, however, can be used for developing similar devices for any set of telelessons or communiques. The achievement tests and all objectives can be found in the appendices of Volume II.

Wonderful You Evaluation. On the 6th of April the teachers in groups 1, 2 and 3 met in a central location. Prior to this meeting the teachers in groups 2 and 3 had been asked to study manual lessons 32 and 33. Groups 1 and 2 met together and viewed the communique. After viewing the communique each teacher completed a Communique Evaluation Form and the prototype teacher achievement test. Teachers in group 2 also completed a Manual Evaluation Form for lessons 32 and 33. Teachers in group 3 completed the Manual Evaluation Forms for lessons 32 and 33 and also prototype teacher achievement test. Teachers in the control group, group 5, completed only the prototype teacher achievement test.

The classes of teacher in groups 1 through 4 viewed lessons 32 and 33 as part of their regular classroom activities. Classes of teachers in group 5 did not have television available in their school.

After the students had viewed the telelessons in questions, classes were chosen at random, from those participating in the study for post testing. The post-achievement test was administered in each classroom by a trained examiner, in most cases junior college students. A summary of the number of classes tested is shown in Table 3-1.

Volume II, Chapter 2, of this report contains a detailed summary of the procedures and results of this experiment.

Patterns Evaluation. On the 13th of April teachers in groups 1, 2, and 3 met in two central locations. Prior to this meeting teachers in groups 2 and 3 had been asked to study manual lessons 30 and 31. Group 2 met and viewed the communique and completed Communique and Manual Evaluation Forms. Groups 2 and 3 met together. Group 1 viewed the communique and completed Communique Evaluation Forms, while group 3 completed Manual Evaluation Forms.

Eighteen junior college students were trained in how to use the POS. Teachers were observed for thirty minute intervals on the day before their class saw each Patterns lesson and again the day after. A summary of the number of teachers observed is presented in Table 3-1. The classes of teachers in groups 1 through 3 viewed lessons 30 and 31 as part of their regular classroom activities. The day following the last observation, the observer administered achievement test to the classes indicated in Table 3-1.

A more complete description of this experiment, including results, will be found in Chapter 3 of Volume II of this report.

PUBLIC BROADCAST SURVEY

The methodological problems involved in assessing public broadcasting are varied and of great dimension. The magnitude of the problem is seen in the fact that the Ford Foundation will spend several millions of dollars in the next year and a half investigating evaluation problems. Based largely on a report and instrument developed by McGraw-Hill under contract with National Educational Television (Siegle, 1969), a device was constructed specifically designed to survey the public television audiences in the State of Georgia. In order to pilot test this instrument, a sample of 164 households was drawn from the Athens, Georgia telephone directory. The instrument was mailed to each household with a

brief cover letter and self-addressed envelope. The initial response to this questionnaire was favorable with a total return of 66 or 40%. A more detailed report of this survey will be found in Chapter 4 of Volume II of this report. Based on this initial survey, the instrument was refined and modified for simplified data processing (Thorp, 1970).

DEVELOPMENT OF MODEL

Evaluation can be described as a means of providing information through formal methods (such as criteria, measurement and statistics) to serve as rational base for decision making activities (Stufflebeam, 1968). The model should, therefore, be concerned with the collection, organization, analysis and reporting of information bearing on the effectiveness of the educational television network in the State of Georgia (See Chapter 1 for further elaboration of this point).

Based on detailed analysis, it was determined that the most logical approach to achieving these decision making goals was through a systems approach. The general systems model takes the form of a flow chart or series of flow charts which represent graphically the logical structure of the organizational functions of the system. The full evaluation model, including systems flow charts, is presented in Chapter 4.

FIELD TESTING OF SELECTED ELEMENTS OF MODEL

In order to test selected elements of the evaluation model, a field test of two components was made. Field testing was made in order to establish the feasibility of large scale use of the model.

Teacher ITV Questionnaire

In order to test the feasibility of the use of the revised Teacher ITV Questionnaire, a sample of 46 elementary schools was drawn from the Georgia Educational Directory (1970). A packet of questionnaires, sufficient

to provide one for each teacher, was sent to each school. Teachers in 29 schools responded to the questionnaires. The remaining 17 schools did not receive the ITV television signal, did not have the television sets, or did not complete the questionnaires for a variety of reasons. Chapter 1 of Volume II contains a complete description of this study.

Public Broadcast Survey

In order to test the feasibility of a mass survey of public television viewers in the State of Georgia, the revised Educational Television Questionnaire (see Appendix K) was sent to a sample of the general Georgia population. Every 200th name in the telephone directories of Atlanta, Albany, Augusta, Columbus, Macon, Rome, Valdosta, and Waycross, Georgia was sent a questionnaire. Questionnaires were sent to 2300 homes in the Metropolitan Atlanta area, while the remaining cities in Georgia received a total of 1700. In addition, 500 names were chosen from the WGTV program mailing guide. All persons lived in the viewing range of Channel 8, WGTV. A complete analysis of the data obtained from this survey is reported in Chapter 4 of Volume II of this report.

SUMMARY

This chapter has presented a broad overview of the procedures that were used in development of the software for and as a result of the evaluation model. In addition, a brief summary of the pilot testing and revision procedures was included. Where possible, field testing of the various instruments was accomplished. A brief description of the procedures used in the development of the mode has been included.

Chapter 4

SPECIFICATIONS OF THE THEORETICAL EVALUATION MODEL

It is difficult, if not impossible, to precisely define the process which resulted in the evaluation model represented in the following series of flow charts. The approach was basically one of deduction. The staff initially set about gathering information on a variety of topics related to the nature of the problem. Among these data were primarily (1) opinions of experts in the field, (2) related research literature, (3) opinions of teachers, students, school administrators, and curriculum experts, (4) facts about the current operation of GETV as viewed by its own staff. As this information was sifted, the major elements, dimensions and variables became apparent. These formed the basis of the model and are delineated later in the chapter.

Several theoretical evaluation models, varying in degree of specificity, were available for modification and adaptation given the purpose of the present project. An extremely abstract model, particularly applicable in curriculum evaluation, is that proposed by Taylor and Maguire (1966). A paper by Stake (1967), which is becoming a mini-classic of the evaluation literature, also significantly influenced present efforts. The criteria, prepared by Metfessel and Michael (1967), useful in evaluating the effectiveness of school programs, were also incorporated in the final model. What resulted from the project was not a final model but a prototype which will have to be modified as further exploration, field testing, and experimentation takes place. And finally, inputs from general systems theory were used (Maccia, 1962; Pfeiffer, 1968). Because of the practical problems posed by the project and its emphasis on data gathering aimed at decision making, the previously cited ideas of Stufflebeam in Chapter 1 were the primary

contribution to the model. A number of requirements for the model guided its development.[1] These were:

The model should

1. Reflect the educational needs of the nation and State of Georgia. Not only current, but also projected needs.
2. Be flexible enough to adapt to changes in objectives and composition of the target population involved in ETV utilization.
3. Allow elements to be logically as well as empirically related.
4. Be consistent with what is known about the teaching-learning process.
5. Be consistent with what is known about evaluation.
6. Be inclusive of or allow for inclusion of all relevant variables.
7. Be abstract yet representational and practical.
8. Be adaptable to cost benefit analysis.
9. Be compatible with the reporting system of the Georgia Department of Education, Division of Planning, Research and Evaluation.

It was not possible to meet all of the criteria just listed. They nevertheless did guide the resulting model. Many unanticipated problems arose during the developmental stages of model building. For example, how does one build flexibility into the model so that opposing requirements can be met? Some data needed for decision making are required to be gathered every year or perhaps even more frequently. Other data need only be gathered once, e.g. how teachers use serials manuals.

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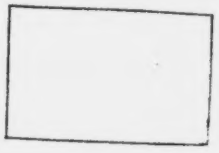
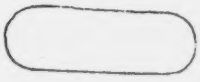
[1] Some ideas reported here have been adapted from Ayers, Johnson, and Shearron (1969, pp. 19-20).

Just a word or two by way of introduction to the series of flow charts which follows.

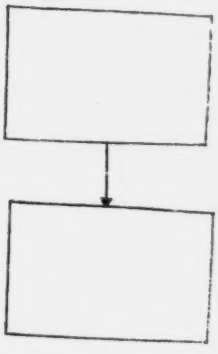
These charts were generated as a first approximation to the evaluation model and represent the logical structure and, to some extent, the tempered sequence. The sumbols and terminology used are the standard ones (See Banghart, 1969; Cook, 1966; Case, 1969). The usual symbols used and their meanings are as follows:



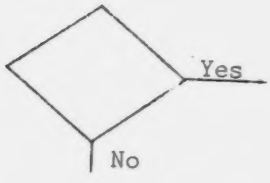
A rectangle indicates a process on a flow chart. Each process may have a flow chart of its own.



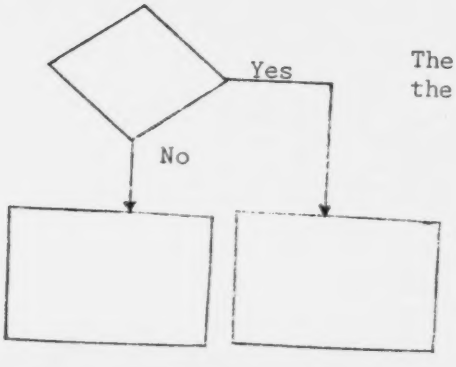
Entrance or exit point from a flow chart.



An arrow indicates the direction of flow of the chart.



A diamond represents a question (binary decision) and is phrased so that there is a yes or no answer.



The arrows leading from a diamond show the alternatives to the decision.

Each activity and decision point on each chart has been assigned an identification number. The first digit specifies the chart number, and following a hyphen, a second set of digits designates the serial placement of that element in the sequence within that particular chart. Secondly, the appearance of gray shaded areas indicates that an instrument, either final-form or prototype, has been developed.

OVERALL EVALUATION SYSTEM FOR GEORGIA EDUCATIONAL TELEVISION NETWORK

A very general outline of GETV is presented in Figure 4.1. Perhaps this figure should have been labeled as dealing with the "operation" of the system rather than with "evaluation." Although evaluation activities are implied in the symbol 1.5, the chart basically describes the sequence of activities in managing and operating a statewide educational television network. The review activities of symbol 1-2 have recently been completed and have been published (Advisory Commission, 1969). In addition, there is in progress within the Georgia State Department of Education, and of necessity also in GETV, a review of goals and objectives. It is assumed that appropriate individuals or groups will be designated to undertake the processes 1.1, 1.2, 1.4 and 1.6. Note that 1.5 actually refers to two sub-systems which will be described later. An ETV Advisory Committee, composed of educational leaders of the state has recently been constituted to provide guidelines for GETV. Committee concern will be with major questions of use of the network. Guidance for the development of a given series is provided by curriculum specialists.

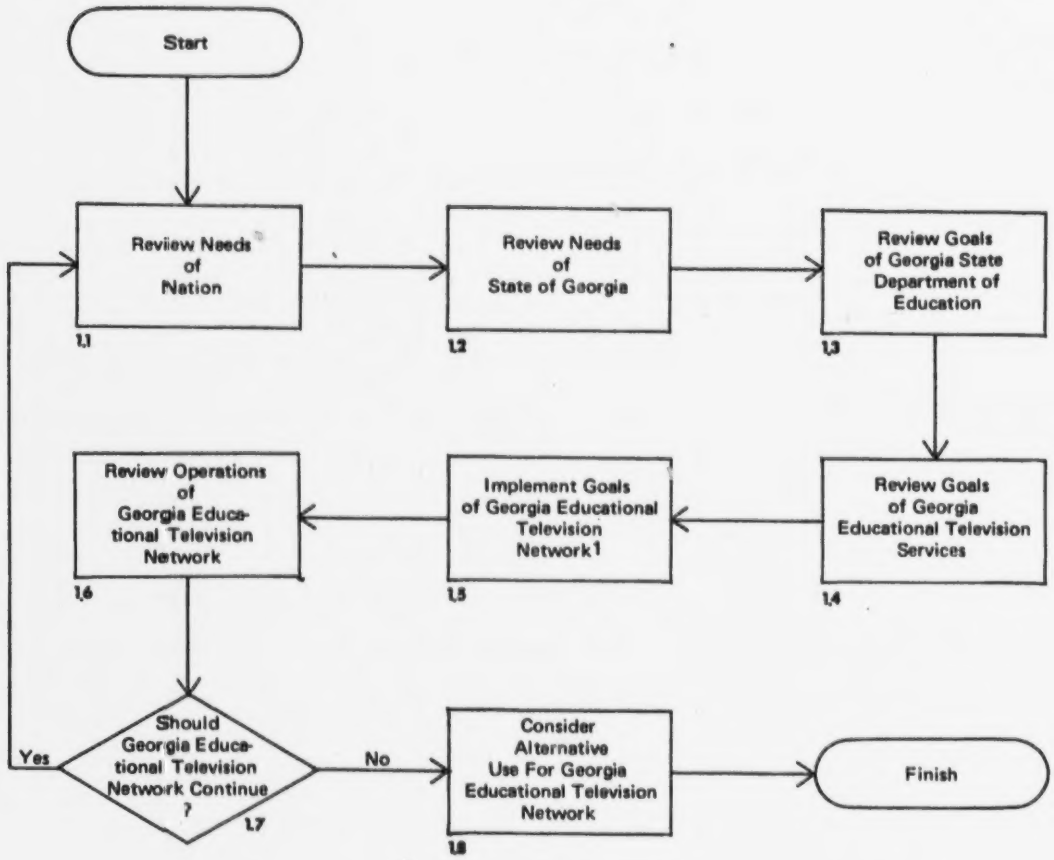


Figure 4-1. Overall Evaluation System For Georgia Educational Television Network

1See Evaluation Systems For Instructional and Public Evaluation (Figures 4-2 and 4-7)

EVALUATION SYSTEM FOR INSTRUCTIONAL PORTIONS OF
GEORGIA EDUCATIONAL TELEVISION NETWORK

A general outline for implementing an evaluation system for instructional television or the in-classroom portion of GETV is described in Figure 4-2. The model could be applied to either the evaluation of a series currently being broadcast, or the total science offering, or all ITV broadcasting. Process 2.1 would undoubtedly be undertaken by the Executive Director of GETV and the Advisory Committee, as would the decisions called for in process 2.4, 2.11, 2.13 and 2.18. The several questionnaires and opinionnaires suggested by process 2.3 have been field tested and are available for application or modification. Descriptions of their development may be found in Chapter 1 of Volume 2 of this report. Note that processes 2.2, 2.5, 2.6 and 2.12 all refer to new sub-systems. Some question about the terms included in process 2.5 might arise. A new series may be developed locally or in cooperation with regional organizations. A series may be adopted wholesale or adapted to meet the needs of GETV. Adaptation might be accomplished through editing, modifying instructional materials sent to teachers, expanding content coverage, or supplementary series with locally produced tapes. Criteria for decision making in any of the decision blocks are difficult if not impossible to specify. This is due to the fact that requirements for programs, series, audiences, etc., will vary considerably. In some cases production quality will be of greatest concern; in others perhaps quality of learning outcomes associated with the production will be considered most important. Decisions regarding which series to select for evaluation (2.10) will involve consideration of age of production, extent of content and acceptance by teachers and instructional technologists. The

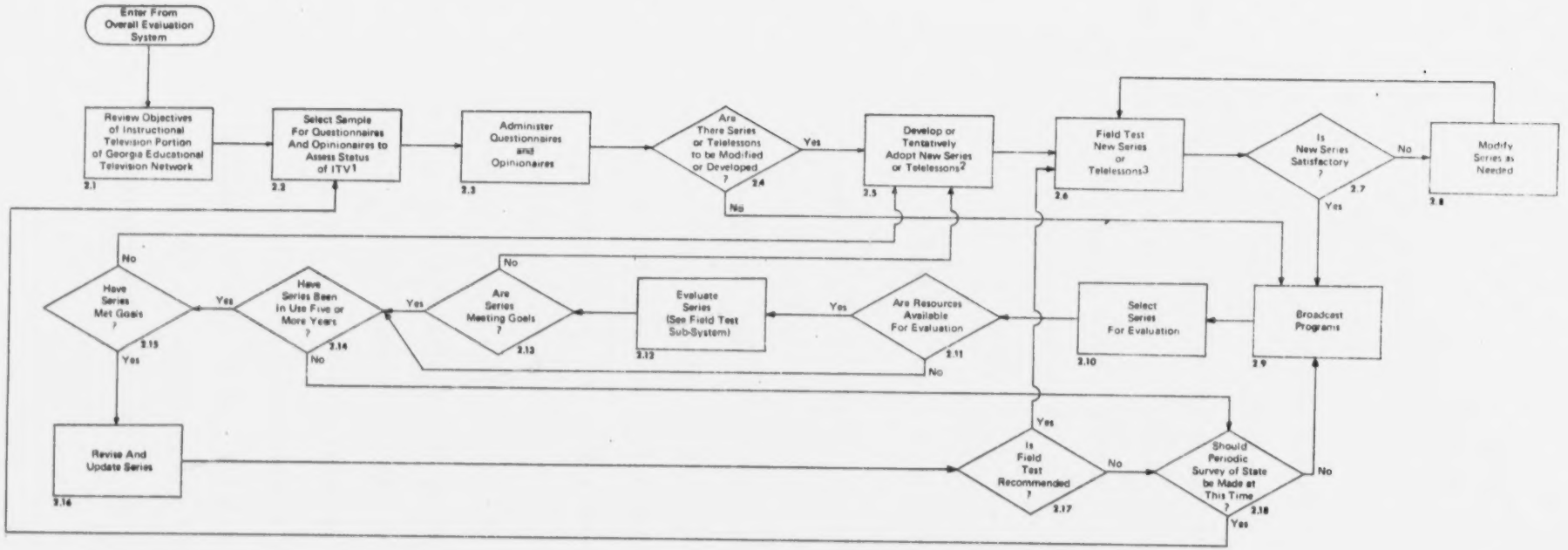


Figure 4-2. Evaluation System For Instructional Portion Of The Georgia Educational Television Network

1See Sub-system – Subject Selection (Figure 4-6)

2See Sub-system – Writing Instructional Objectives (Figure 4-4)

3See Sub-system – Field Test (Figure 4-3)

criteria for selecting which series to revise are also difficult to specify (2.14). The model as presented relates primarily to traditional series with relatively fixed formats. Where a series employs a continually changing format, a new and probably more complex set of criteria will need to be spelled out. The five year criterion was quite arbitrary but reflects the best "feelings" of local television experts. At process 2.15 another alternative probably should be allowed, namely the choice of dropping the entire series. Also, if the series is meeting goals, then there is obviously no need for process 2.16.

FIELD TESTING OR REVIEWING A NEW TELEVISION PRODUCTION

The sub-system described by Figure 4-3 includes two relatively distinct approachesto evaluation. Choice between these will be dictated by such considerations as time requirements, financial resources, and availability of appropriate personnel. The reader can see advantages and disadvantages to either approach. The data based teacher-student would in general be preferred if for no other reason than its responsiveness to the actual instructional situation and materials. As a first approximation to this approach one could collate the systematically gathered opinions of individuals with expertise in learning theory, instructional methodology and curriculum. Again the importance of the GETV Advisory Committee is seen as their collective wisdom is required at 3.2, 3.3, 3.4, and 3.5. Process 3.6 is just shown to indicate that an alternative to Review or Field Testing could be developed. Activities related to sampling of subjects for evaluation are referred to in processes 3.7 (which in turn refers to another subsystem) and 3.8. It is critical that commitment and cooperation

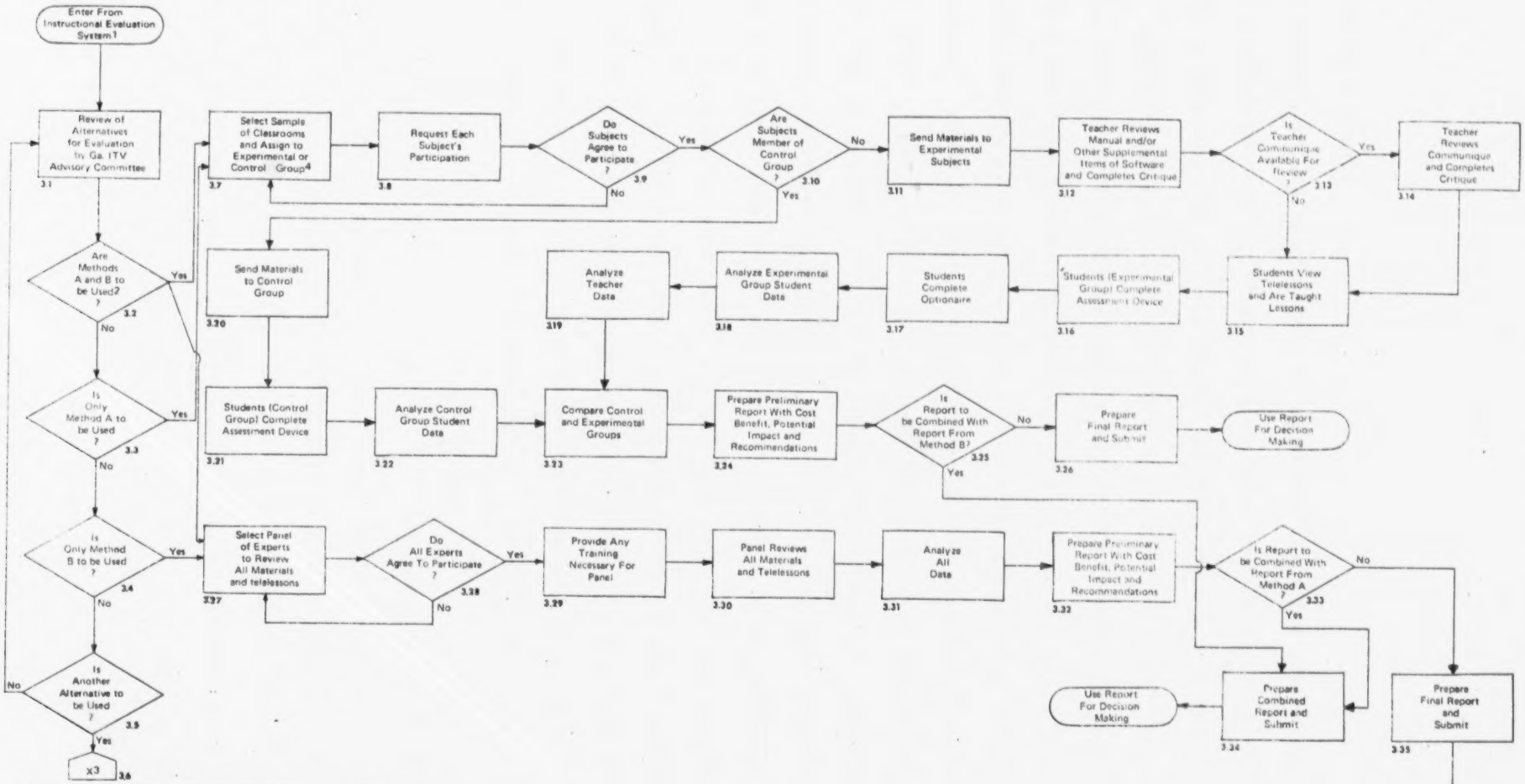


Figure 4-3. Sub-System – Field Test and/or Review of a New Production

1Start With Assessment Device Sub-System – Construction of Assessment Devices (Figure 4-5)

2Method A – Teacher and Student Method B – Panel of Experts. (See Text for Details)

3Alternative Methods To Be Developed.

4See Sub-System – Subject Selection (Figure 4-6)

for the entire duration of the evaluation period be obtained from the sample. During the field testing of the Instructional Television Questionnaire developed in the present project, those schools originally agreeing to participate in a survey later backed out, severely reducing the number of usable returns. The effects on both reliability and validity were considerable. Administration of the assessment devices suggested by processes 3.16, 3.17 and 3.21 could be handled by local school personnel.

For reasons of convenience, however, it might be reasonable to place an outside group in charge of administration. Present experience suggests that junior college students can be readily trained to administer such instruments, relieving teachers and principals of additionally burdensome tasks. On the other hand, it was not our experience that junior college students could be readily and efficiently trained in classroom observational techniques. Personnel from the GETV Utilization staff might also be employed in the data gathering activities of these three processes. Processes 3.18, 3.19, 3.22, 3.23, 3.24, and 3.31 call for application of appropriate analysis procedures. These procedures will almost always be statistical in nature. Specific methods cannot be detailed at this time due to lack of knowledge of data requirements. It might be worthwhile to consider the application of cost-benefit analysis procedures, particularly relative to process 3.24 (Crane and Abt, 1969; Thomas, 1969). And finally with regard to Figure 4-3, it should be noted that the review panel (processes 3.27 and 3.29), which will probably be selected by the GETV Advisory Committee, should receive some training in the review process and procedures and criteria identified for decision making.

WRITING INSTRUCTIONAL OBJECTIVES

Turning now to Figure 4-4 we note an outline for writing efficient, relevant, and useful educational objectives. The activities and checklists stand pretty much on their own. The checklists used in writing the instructional objectives have been gathered together in Table 4.1. This sub-system was based on original work by Yelon and Scott (1970).

CONSTRUCTION OF ASSESSMENT DEVICES

The sub-system of Figure 4-5 is also virtually self-explanatory. It was suggested by a PERT chart developed by Cook (1966). It has been already demonstrated to lead to satisfactory assessment devices. It is assumed that the objectives generated from the activities suggested by Figure 4.4 will input into this sub-system. The requirements will of course be dictated by the nature of the objectives of the production. An experimental procedure was tried out in the present project. Pairs of teachers were given a brief overview of the procedures involved in stating instructional objectives. They were given copies of Mager's book Preparing Instructional Objectives (Mager, 1962) and time was spent witn each of the two pairs reviewing the requirements of a good instructional objective. The groups then viewed two telelessons and generated objectives. These objectives then formed the basis for assessment devices. It was our experience that the objectives, and the subsequent devices constructed by the same teacher pairs varied considerably in quality. A final recommendation will be that this procedure not be used. A trained team of specialists would be better than taking classroom teachers and trying to turn them into experts. In the future, developers and authors of productions should initially provide objectives useful for assessment

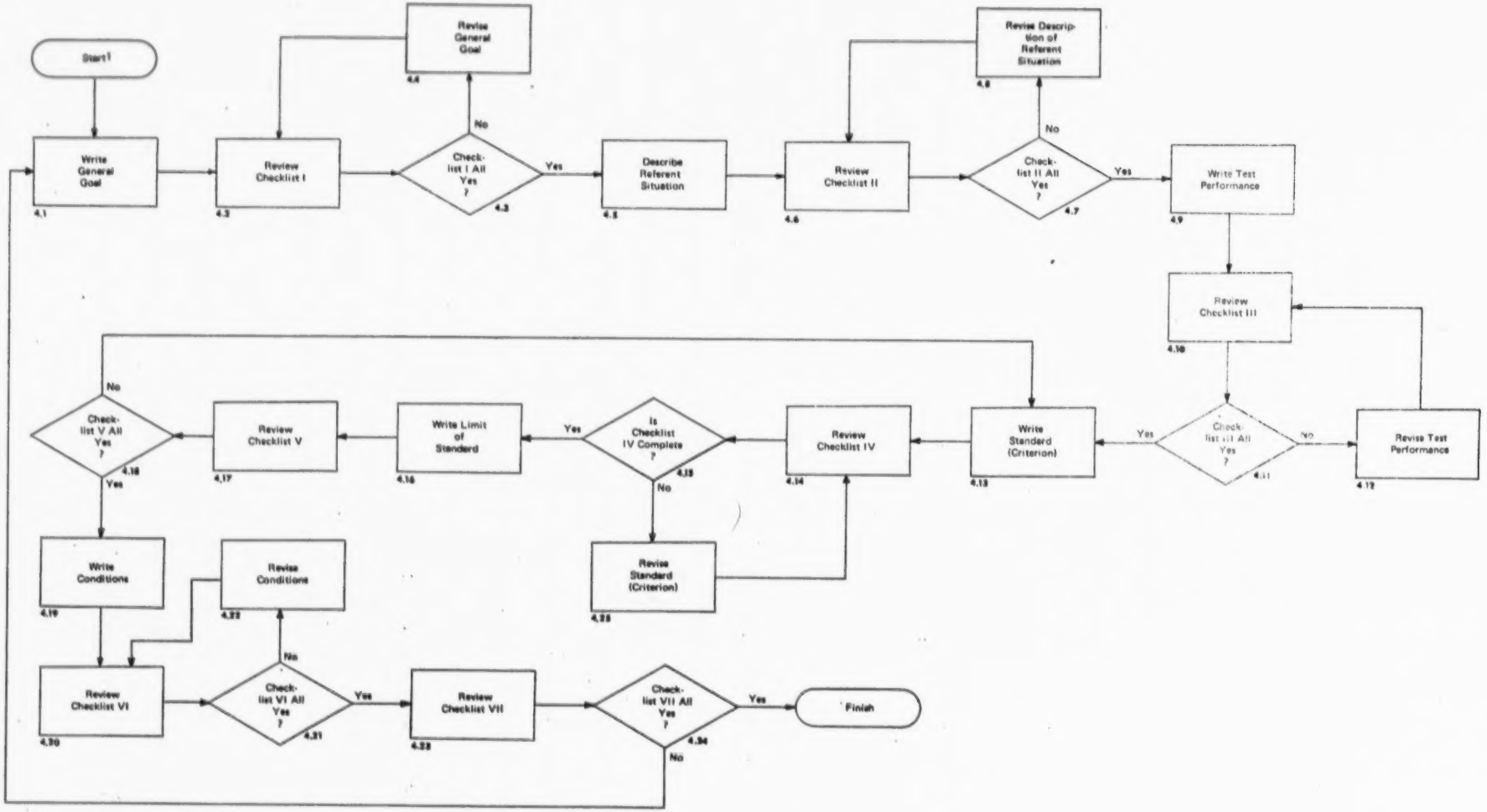


Figure 4-4. Sub System– Writing Instructional Objectives.

[1]Based On: Yelon, Stephen L. and Roger O. Scott, A Strategy For Writing Objectives. Kendall/Hunt Publishing Company, Dubuque, Iowa 1970

TABLE 4.1
CHECKLISTS TO ACCOMPANY FIGURE 4-4 SPECIFYING CRITERION
QUESTIONS USED IN WRITING INSTRUCTIONAL OBJECTIVES

Checklist I

1. Is the general goal a broad statement of something desirable and within your subject area? Yes No
2. Is the general goal stated in terms of:
   a. Student behavior? Yes No
   b. Ends of instruction? Yes No
3. Is general goal chosen from dependent variables as stated in the most feasible system modification? Yes No

Checklist II

1. Does the description include:
   a. The situation for which the student is being prepared? Yes No
   b. The type of performance required in that situation? Yes No
   c. The standards usually used to judge the performance in that situation? Yes No

Checklist III

1. Is the statement in behavioral terms? Yes No
2. Is the stated behavior the closest feasible simulation to the behavior required in the referent situation? Yes No

Checklist IV

1. Has one or more of these standards been used in writing the criterion? Yes No
   a. With these characteristics: _____
   b. So quickly that: _____
      1. Exact time? Yes No
      2. Approximate time? Yes No
         a. Limits for _____ unit of time.
   c. According to: _____
      1. Performance identical to reference? Yes No
      2. Performance which approximates characteristics or meaning of reference? Yes No
   d. So well that: _____
      1. Consequence of product identical in characteristics? Yes No
      2. Consequence approximates characteristics of product? Yes No
2. Is the stated standard the closest approximation to the standard usually used in the referent situation? Yes No

Checklist V

1. Is the limit and the standards sufficient:
   a. As prerequisite to learning another performance? Yes No
   b. As directly prerequisite to performing in the referent situation? Yes No
   c. To convince you that the performance is stable? Yes No

TABLE 4.1 (CONT)

Checklist VI

1. Are the stated conditions the closest feasible simulation to the conditions in the referent situation?	Yes	No
2. Are the conditions those affecting this performance only?	Yes	No

Checklist VII

1. Are all the statements so clear that one or more groups of (a) colleagues, (b) students, or (c) any parent or citizen could look at the objective and the student's performance and would agree whether the student had performed according to the criterion limit under the required conditions?	Yes	No

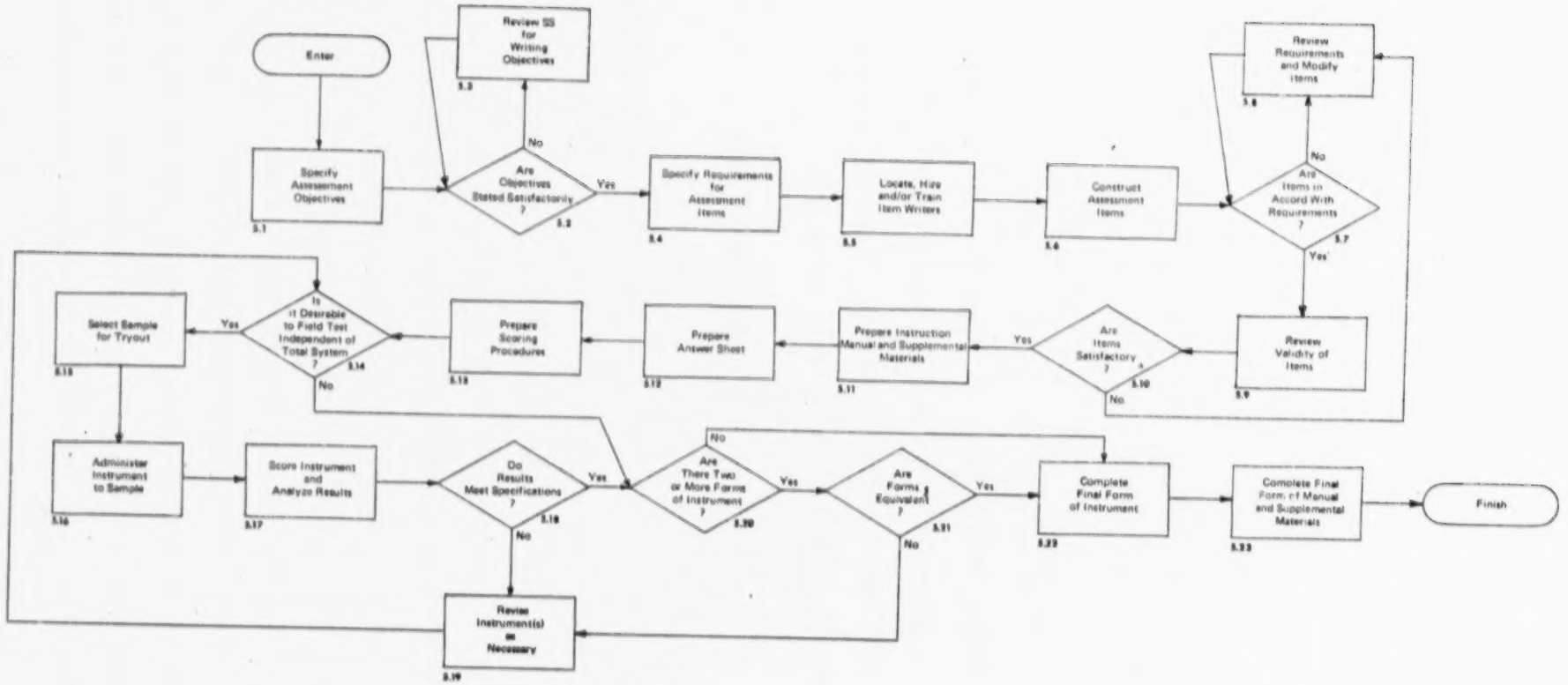


Figure 4-5. Sub-System — Construction of Assessment Devices

[1]Enter With Prepared Objectives Sub-System —Writing Instructional Objectives (Figure 4-4)

activities. The assessment devices developed will primarily be those aimed at measuring learning outcomes in the traditional form. Specific procedures useful in constructing such devices can be found in any number of measurement texts (Gerberich, Green and Jorgensen, 1962; Ahmann and Glock, 1967; Swain, 1969; and Payne, 1968). Other kinds of devices can be constructed with guidance from such authors as Webb et. al. (1966), Shaw and Wright (1967), Oppenheim (1966), and Bonjean, et. al. (1967). Again specific requirements (processes 5.4, 5.7 and 5.10) must await detailing of the objectives involved. Consideration will be given such variables as item format, time available for administration, behavior measured, language, etc. A measurement expert should be involved in making the decision called for in processes 5.2, 5.7, 5.10, 5.18, 5.20 and 5.21.

SUBJECT SELECTION FOR EVALUATION AND RESEARCH STUDIES

A very brief outline of a general approach to sampling of subjects for inclusion in evaluation and research studies is presented in Figure 4-6. Specific procedures, again, cannot be determined until nature of data gathering activity is spelled out. Only after such a decision has been made can the sampling units be specified (6.1). Many already available lists can be used to sample. An excellent source, if the sampling unit is school, county or other large block, is the Georgia Educational Directory. In addition, the Division of Planning, Research, and Evaluation has available lists of principals and other administrative personnel and can select other units from a variety of specifications. Teachers could be identified from lists of principals and other administrative personnel, and can select other units from a variety of specifications. Teachers could be identified from lists of those

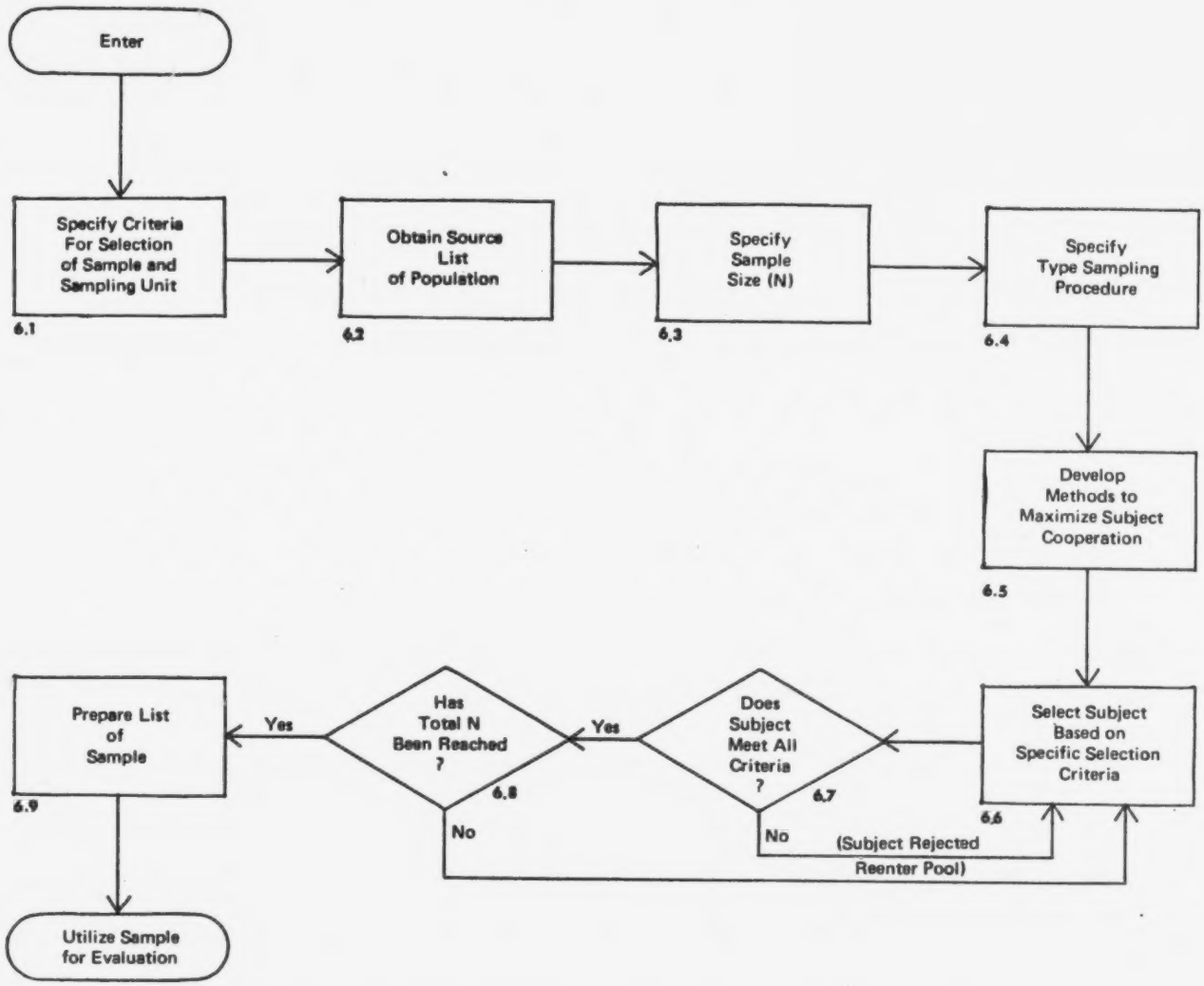


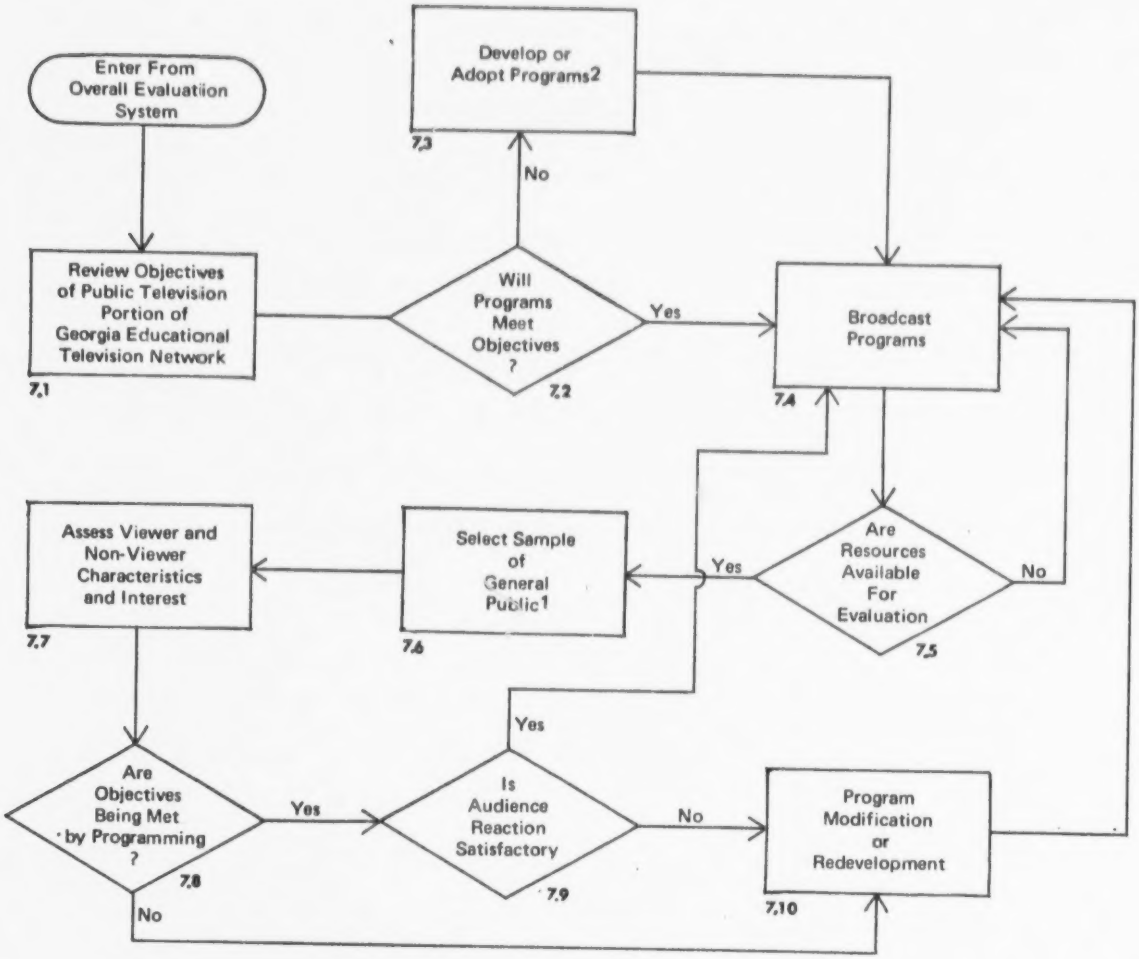
Figure 4-6, Sub-system — Subject Selection for Evaluation and Research Studies

participating in the teacher retirement system. General samples of the public can probably best be gathered from telephone directories. Sample size (process 6.3) can now be conveniently estimated from a procedure outlined by Krejcie and Morgan (1970).

Specific procedures (process 6.4) could be designed by reference to any of a large number of authoritative texts (e.g. Parten, 1950; Hansen, Hurwitz and Madow, 1953; or Stephan and McCarthy, 1958) or to the overview chart provided in Appendix A. The importance of soliciting subject cooperation cannot be underestimated. A large number of practical concerns will be influencial at this point in the evaluation. Time of year and funds available are just two of consequence.

EVALUATION SYSTEM FOR PUBLIC PORTION OF GEORGIA EDUCATIONAL TELEVISION NETWORK

Another very general outline, this time for evaluation of the public broadcasting segment of GETV, is presented in Figure 4-7. Due to the lack of formal statements regarding public broadcasting in the state of Georgia, the investigators were hard pressed as to the requirements for a design in this area. The GETV Advisory committee should probably be most influential in several decision-making activities, particularly processes 7.2, 7.5, 7.8 and 7.9. The preliminary survey undertaken in conjunction with this project did not in general, demonstrate feasible procedures (see particularly Chapter 4 of Volume 2 for description). The major problem, of course, is to secure a large enough return so as to have some confidence in the statistics. Perhaps a shorter version of the questionnaire printed on an IBM card, and use of item sampling (Lord, 1962), rather than people sampling procedures, would significantly improve the return.



gure 4-7. Evaluation System For Public Portion of Georgia Educational Television Network

ee Sub-System — Subject Selection (Figure 4-6)
ee Sub-System — Program Development (Figure 4-8)

PROGRAM DEVELOPMENT FOR PUBLIC PORTION
OF GEORGIA EDUCATIONAL TELEVISION NETWORK

The lack of specific audience objectives is again felt in attempting to outline reasonable program development concerned with public broadcasting. A first approximation is presented in Figure 4-8. This sub-system begins with a review of objectives, moves through a consideration of the development or adoption of a new program or series, to an assessment of viewer opinions, and concludes with open-air broadcasting. Implementation of the model must await description of (a) goals of the network, and (b) specific objectives for public broadcasting. The need for guidance from an advisory group is evident. One of the great problems here rests with the limited appeal of a great many programs being broadcast. The philosophy of "something for everyone" seems to permeate public broadcasting. Such an approach to programming surely has great financial implications. Suffice it to say that some resolution of the "goals of GETV" problem needs to be made.

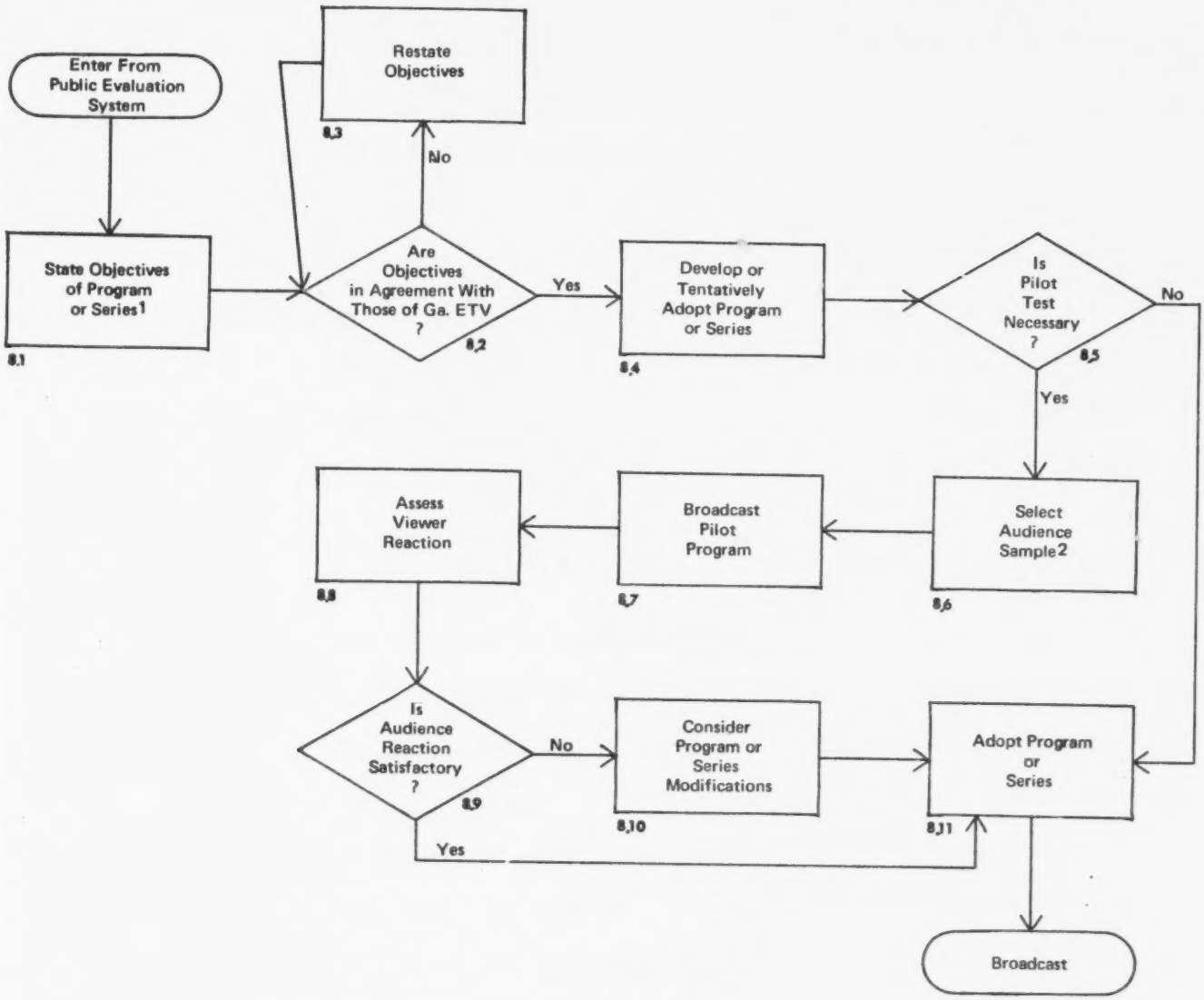


Figure 4-8. Sub System — Program Development for Public Portion of Georgia Educational Television Network

1See Sub-System — Writing Instructional Objectives (Figure 4-4)
2See Sub-System — Subject Selection (Figure 4-6)

Chapter 5

SELECTED SUMMARY OF FIELD TEST RESULTS AND CONCLUSIONS

As was noted in Chapter 3, the general strategy employed in this project was one characterized by induction. In that regard it perhaps would have made more sense to present the evaluation model after the results. The research studies, however, were both inputs and outputs of the model. This final chapter, therefore, will be concerned with a brief summary of the results of pilot and field studies. General conclusions will be drawn and comments on the feasibility of the various procedures tried out. For detailed presentations of the research design and results, the reader is referred to Volume II of this report. The general organization of this chapter parallels that of Chapter 3, "Brief Overview of Procedures".

RESULTS OF QUESTIONNAIRE ADMINISTRATIONS

Sampling Student Attitudes

Two parallel studies were undertaken. In the first (the Lower Grade Study) a twenty item inventory requiring the marking of faces reflecting different dispositions were administered to a group of Second grade students (two intact classes, N=82) and Third grade (two intact classes, N=83) in the Metropolitan Atlanta area. Preliminary examinations failed to show any sex or inter-grade differences. The data were combined. A summary for the total 165 students is found in Table 5-1. In examining this table, one is first struck by the generally favorable attitudes expressed by the students. Uniformity might almost suggest the presence of a response set. The high correlation between a positive attitude toward school (Item 1) and watching television in school (Item 3) might corroborate a

TABLE 5-1

Summary of Responses for Second and Third Grade Students (N=165) Selecting Each of Four Attitudes Rating Categories on Instructional Television Questionnaire (How I Feel About Television in School)

Question	Very Happy (4) %	f	Less Happy (3) %	f	Somewhat Unhappy (2) %	f	Unhappy (1) %	f	$\bar{X}$
1. How do you feel about school?	61	100	19	32	6	9	14	24	3.3
2. How do you feel about watching television at home?	74	123	22	36	2	4	1	2	3.7
3. How do you feel about watching television in school?	62	102	26	43	7	12	5	8	3.4
4. How do you feel about learning from television in school?	72	119	21	34	6	10	1	2	3.6
5. How do you feel about the television teacher?	50	83	32	53	9	15	9	14	3.2
6. How do you think the boys and girls in this class feel about television in school?	63	104	26	44	8	13	9	14	3.6
7. How do you feel about things the television teacher tells you to do?	58	95	26	43	7	12	9	15	3.3
8. How do you feel about the way your classroom teacher does the things that the television teacher suggests?	68	112	18	30	6	10	13	22	3.5
9. How do you feel about seeing the same teachers on television each week?	21	34	25	41	24	40	30	50	2.4
10. How do you think your classroom teacher feels about television in school?	81	134	16	26	2	3	1	2	3.8
11. How do you feel when the television set is turned off in your classroom?	18	30	6	10	18	30	58	95	1.8

Note: Mean rating calculated by first assigning value of 4 to Very Happy category, 3 to Less Happy, etc.

TABLE 5-1 (Cont'd)

Summary of Responses for Second and Third Grade Students (N=165) Selecting Each of Four Attitude Rating Categories on Instructional Television Questionnaire (How I Feel About Television in School)

Question	Very Happy (4)		Less Happy (3)		Somewhat Unhappy (2)		Unhappy (1)		$\bar{X}$
	%	f	%	f	%	f	%	f	
12. How do you feel about how good your classroom television looks and sounds when it is on?	69	114	20	33	9	15	2	3	3.3
13. How do you feel about the things that the television teacher uses?	56	93	27	45	12	20	4	7	3.4
14. How do you feel when you think about television?	70	115	24	39	2	3	4	7	3.6
15. How do you think your mother and father feel about television in school?	64	105	19	32	6	9	12	19	3.4
16. How do you feel about the pictures and drawings that the teacher on television uses in talking about the lesson?	61	101	25	41	6	10	8	13	3.4
17. How do you feel about the things (that I do) (that your classroom teacher does) before you watch the television in school?	49	81	29	48	10	16	12	20	3.2
18. How do you feel about the things (that I do) (that your classroom teacher does) after you watch the television in school?	42	70	29	49	12	19	16	27	3.0
19. How do you feel about the teachers in (your) (our) school?	73	122	17	28	3	5	6	10	3.6
20. How do you feel about the questions that you have been asked today?	75	124	13	23	4	7	7	11	3.6

Note: Mean rating calculated by first assigning value of 4 to Very Happy categories, 1 to Less Happy, etc.

general "everything about school is good" set. The students are sad when the television set is turned off and are quite happy, with perhaps one exception, with what they see. This exception being the same teachers week after week. The variety on Sesame Street is, of course, one of the factors which helped make it successful.

The upper grade form of the instructional television questionnaire contained two parts. Part I was composed of 15 yes-no questions, while Part II contained 13 free response sentence completion items similar to those used by Perrodin (1966) in his investigation of attitudes toward science. The general areas covered by the questions were virtually the same as those included in the lower grade form.

This instrument was administered to 89 Sixth grade students (46 males and 43 females) in a Northeast Georgia school. Again no sex differences were noted and the data combined. A summary of the responses of these students to the 15 questions of Part I of the questionnaire is presented in Table 5-2. All students indicated that they watched television in school and 90% of them liked to watch it. Over 80% indicated that the teacher did prepare them somewhat for the telelessons, did engage in some post lesson activity and felt they did learn from watching television. A trend toward pre and post lesson activity was not confirmed by actual classroom observation undertaken as part of another project. This observation survey was done in conjunction with a sixth grade math series. Approximately 65% of the students felt that television did in fact facilitate their school work and that educational television helped improve their educational opportunities. This last item, upon questioning of the students, was found to be interpreted as indicating that television pointed out topics, areas, subjects, ideas that they had not previously been concerned with and stimulated

TABLE 5-2

Summary of Responses of Sixth Grade Students (N=89) to Structured Portion (Part I) of Upper Grade Form of Instructional Television Questionnaire

Frequency Yes Response	% Yes		Question
80	90	1.	Do you like to watch television in school?
58	65	2.	Do you think that watching television in school helps you with your school work?
89	100	3.	Do you ever watch television in school?
19	21	4.	When you are at home during school hours, do you ever watch the same shows you see in school?
74	83	5.	Does your teacher ever talk about a television show before you see it?
19	21	6.	Do you ever do any of the things that the television teacher tells you to do?
53	60	7.	Do you like the television teachers?
79	89	8.	Does your teacher talk about a television show after you see it?
0	0	9.	Do you watch television in school everyday?
49	55	10.	Does your teacher ever assign a television program for you to view at home.
74	83	11.	Do you think think that you learn from watching television in school?
1	1	12.	Do you keep a television notebook?
2	2	13.	Have any of the television teachers ever visited in your school?
26	29	14.	Have you done a project as a result of watching a television program in school?
60	67	15.	Do you think that television in your school has improved your educational opportunities?

them to search out information about them. The low rate of at-home viewing of ITV when possible (2%) was not unexpected.

A selected summary of the responses to the sentence completion portion (Part II) of the Upper Grade Instructional Television Questionnaire is found in Table A 5-3. These data confirm the predominately positive responses of Table 5-2. In general sixth graders view in-school television as truly educational, where interesting and new ideas are presented to them. Far and away, the most liked program is an upper elementary grade language arts program, Cover to Cover, which deals with appreciation in selected children's literature. And finally the responses indicate that some students experience some preparatory and post lesson classroom activities.

Sampling Teacher Opinions

Initially a questionnaire was constructed to gather information about the relationship of instructional television to students and to school administrators; supplementary materials for use with instructional television; utilization of instructional television, including scheduling problems; use of communiques and certain personal data about each respondent. The teacher questionnaire contained 44 yes-no items, and a list of 60 adjectives that each respondent was asked to mark either yes or no depending on his judgment as to whether or not the adjective was descriptive of instructional television. In addition the questionnaire contained eight items of personal information (years of teaching experience, level of certification, etc.) and five free response questions such as what programs would you like to see aired on instructional television.

An initial "teacher" form of the Instructional Television Questionnaire was pilot tested and revised.

TABLE 5-8

Selected Summary of Responses by Sixth Grade Students (N=89) to Sentence Completion Portion (Part II) of Upper Grade Form of Instructional Television Questionnaire*

Percent	Item and Illustrative Responses
	TELEVISION IN SCHOOLS IS:
18%	good,.O.K., fun
54%	educational and interesting
16%	not exciting, boring, uninteresting
	MY FAVORITE TELEVISION PROGRAM THAT I SEE IN SCHOOL IS:
78%	Cover to Cover
20%	Places in the News
2%	other programs
	WHEN IT IS TIME FOR OUR TELEVISION LESSON:
45%	we sit down and listen, pay attention, preparation activities
21%	we watch it
7%	we get restless, dislike it
	WHEN OUR TELEVISION LESSON IS OVER:
43%	we discuss it
16%	do other assignments, read, etc.
9%	go to lunch
	I LIKE TO WATCH TELEVISION IN SCHOOL BETTER THAN:
28%	work at written assignments
19%	Social Studies
12%	Spelling
	WE WATCH TELEVISION IN SCHOOL BECAUSE:
40%	we might learn new things do learn new things
26%	my teacher thinks it is helpful
10%	it is educational and interesting

*Note that percents do not sum to 100 as only most frequently occuring responses are summarized.

The revised instrument is a 51 item multiple choice questionnaire, with ten items devoted to personal data about the teacher. The 41 items in the questionnaire center on the general topics of the relationship of instructional television to students, relationship of instructional television to school administrators, supplementary materials, utilization of instructional television and instruction and scheduling of instructional television. A copy of this instrument is found in Appendix D of this report.

A field test of this instrument was conducted with teachers in the Spring of 1970 in schools in the State of Georgia. Schools for field testing were chosen from the alphabetical listing of schools found in the Georgia Education Directory (GED) for the school year 1970. Twenty schools were selected by drawing every 48th school in the list that did not have classes above the ninth grade. This restriction was imposed on the sampling scheme, since most instructional television is used in classes below the ninth grade. Of the ten congressional districts in Georgia, seven were represented at least once in this initial sample. To increase the reliability, over-all return, and to provide for data shortages due to non-respondents, 20 additional schools were chosen by listing congressional districts not covered in the first sampling, and then choosing schools from the GED that were located in these areas of the state.

Packets of materials were mailed to the principal in each school with a request that he distribute the questionnaires to the teachers in his school. Return envelopes were provided for each principal. After the initial mailing six principals immediately responded that either their schools were not equipped for television reception or their teachers did not use television because of poor reception. Six additional schools were chosen from the GED to replace those that could not or did not receive a television signal.

It was anticipated that approximately 640 teachers would be available in the 40 schools that were contacted. Eventually 29 schools responded to the survey with a usable return of 397 teacher questionnaires. The results of this administration of the instrument are summarized in Table 5-4. This table presents the mean and standard deviation of the rating for items 1 through 41 of the instrument. Items 42 through 51 refer to demographic data. The data from items 1 through 41 were submitted to factor analysis. However, no discrete factors were isolated. In general the teacher responses to the items were below average with most being around 2.50. It is interesting to note that the highest mean (3.57) rating for any item related to the perceived support that the principal gave to the use of instructional television in the school. Lowest rated items tended to deal with class related projects supposedly resulting from influence of ITV.

Questions 42 through 49 sought personal information about the teachers, while questions 50 and 51 established whether or not the teacher had a television set and if she used it in her classroom. The average teacher surveyed teaches between grade levels two and five, is female, has been teaching more than ten years, holds a bachelor's degree, is certified and is between the ages of 46 and 55. Eighty-six percent of the teachers have access to television sets, and 66% use them for Georgia In-School television series.

The results of this study were somewhat disappointing in that there was only a 62% return of the questionnaires and the factor analysis of the instrument did not reveal a discrete factor pattern. However, the instrument does lend itself to gathering useful information about the relationship of teachers to instructional television. This instrument coupled with the instruments described later in this report will help give an overall pic-

TABLE 5-4

Summary of Means and Standard Deviations for Forty-One Items of the Teacher ITV Questionnaire[1]
(N=397)

Item	$\bar{X}$	SD
Relationship of Instructional Television to Students		
1. Relevance of subject matter covered in instructional television lessons to the needs of your students.	2.75	1.40
2. The outside projects that your students have developed as a direct result of an instructional television program or series.	1.74	1.28
3. Outlook that your students have each week for the lessons they see on television.	2.61	1.51
Relationship of Instructional Television to School Administrators		
4. Support that your local school superintendent gives to the use of instructional television in your school system.	3.16	1.59
5. Support that your local curriculum director or coordinator gives to the use of instructional television in your school system.	2.61	1.82
6. Support that your principal gives to the use of instructional television in your school.	3.57	1.60
Supplementary Materials		
7. Quality of the supplementary materials available for use before and after instructional television programs.	2.33	1.39
8. Quantity of the supplementary materials available for use before and after instructional television programs.	2.10	1.36

[1]Rating Scale: Items 1-17: 1 = Poor, 2 = Fair, 3 = Average, 4 = Above Average, 5 = Excellent
Items 18-41: 1 = Never, 2 = Sometimes, 3 = Usually, 4 = Always.

TABLE 5-4 (Cont'd)

Summary or Means and Standard Deviations for Forty-One Items of the Teacher ITV Questionnaire (N=397)

Item	$\bar{X}$	SD
Utilization of Instructional Television		
9. The advice and assistance that your curriculum director or supervisor is able to give on the utilization of instructional television.	1.74	1.53
10. The value of workshops or meetings conducted by the Georgia Educational Television Network Utilization Staff. (Omit this question if you have not attended a meeting within the last twelve months.) (N=51)	3.51	1.09
11. Training you had as an undergraduate in college on the use of instructional television. (If you had none, omit this question.) (N=83)	3.02	.99
Instructional and Scheduling of Instructional Television		
12. Format of instructional television programs.	2.56	1.64
13. Personality of the television teachers.	3.30	1.55
14. Length of the instructional television programs that you use with your classes.	2.75	1.52
15. Relationship of your scheduled classroom activities with instructional television programs.	2.42	1.40
16. Influence that your experience with instructional television has had on your pursuing additional academic work.	1.96	1.54
17. Overall worth of instructional television in the school curriculum.	3.00	.88

[1]Rating Scale: Items 1-17: 1 = Poor, 2 = Fair, 3 = Average, 4 = Above Average, 5 = Excellent.

Items 18-41: 1 = Never, 2 = Sometimes, 3 = Usually, 4 = Always.

TABLE 5-4 (Cont'd)

Summary of Means and Standard Deviations for Forty-One Items of the Teacher ITV Questionnaire[1]
(N=397)

Item	$\bar{X}$	SD
Relationship of Instructional Television to Students		
18. Do your students keep a television notebook?	1.27	.88
19. Do your classroom tests include items directly related to what your students learned from instructional television?	1.83	1.03
20. Do you prepare your students for an instructional television program?	2.47	1.26
21. Degree to which you feel it is practical for you to prepare your students for a particular instructional television program?	2.50	1.50
22. How often do you conduct a follow-up activities with your students, after they have viewed an instructional television program?	2.48	1.28
23. Extent to which you feel that the content of instructional television programs, recommended for students, is at the appropriate level?	2.59	1.25
24. Do you feel that the presentation of instructional television programs, recommended for your students, is at the appropriate grade levels?	2.61	1.24
25. Do you think that your students enjoy watching instructional television?	2.77	1.35
Relationship of Instructional Television to School Administrators		
26. Does your principal cooperate with you and your fellow teachers in adjusting the overall schedule of the school in order to view instructional television?	1.87	1.11

[1]Rating Scale: Items 1-17: 1 = Poor, 2 = Fair, 3 = Average, 4 = Above Average, 5 = Excellent
Items 18-41: 1 = Never, 2 = Sometimes, 3 = Usually, 4 = Always.

TABLE 5-4 (Cont'd)

Summary of Means and Standard Deviations for Forty-One Items of the Teacher ITV Questionnaire[1]
(N=397)

	Item	$\bar{X}$	SD
	Instruction and Scheduling of Instructional Television		
27.	Extent to which you find it difficult to organize your classroom activities around the instructional television schedules?	1.87	1.11
28.	Would you like to be able to repeat having your class view a particular instructional television program at a later time after its initial showing?	1.34	1.09
29.	Does the present schedule for instructional television interfere with the organization of your instructional program?	1.84	1.05
30.	Do you cooperate with your fellow teachers in adjusting class meetings in order to view instructional television programs?	2.58	1.49
31.	Is the decision to use a particular instructional television series made by you?	2.66	1.[illegible]
32.	Is the decision to use a particular instructional television series made by your department head?	1.07	1.[illegible]
33.	Is the decision to use a particular instructional television series made by your principal?	1.27	1.05
34.	Is the decision to use a particular instructional television series made by a group of you and your fellow teachers?	1.73	1.34
35.	Extent to which you feel that the programs on instructional television are up-to-date in terms of the validity of their content?	2.77	1.32

[1]Rating Scale: Items 1-17: 1 = Poor, 2 = Fair, 3 = Average, 4 = Above Average, 5 = Excellent
Items 18-41: 1 = Never, 2 = Sometimes, 3 = Usually, 4 = Always

TABLE 5-4 (Cont'd)

Summary of Means and Standard Deviations for Forty-One Items of the Teacher ITV Questionnaire[1] (N=397)

Item	$\bar{X}$	SD
36. Extent to which you, as a teacher, feel that you learn subject matter content as a result of watching instructional television?	2.48	1.23
37. Extent to which you feel that you learn teaching techniques from watching the television instructor?	2.17	1.15
38. Extent to which you tend to organize your classroom activities around an instructional television lesson or lessons?	1.98	1.07
39. Extent to which you feel that the use of instructional television tends to lend structure to your classroom lesson?	2.16	1.21
40. Extent to which you feel that the use of instructional television causes you to plan your lessons more closely?	1.96	1.19
41. Extent to which you think that the instructional television presentations are appropriate for the grade level for which they are designed?	2.55	1.38

[1]Rating Scale: Items 1-17: 1 = Poor, 2 = Fair, 3 = Average, 4 = Above Average, 5 = Excellent
Items 18-41: 1 = Never, 2 = Sometimes, 3 = Usually, 4 = Always

ture of the use of instructional television in the schools.

Sampling Opinions of Principals

A 30 item (Yes-No) questionnaire was administered to a group (N=37) of predominately elementary school principals. The content of the Principal form of the ITV Questionnaire paralleled that of the Teacher form. In general the principals felt that there is a strong need for additional materials for use with instructional television and for additional training in the use of the medium in the classroom. Over 70% of the principals indicated that they recommended instructional television at all grade levels and that they were aware of the programs that their teachers were using. About 70% felt that the communiques were of value to their teachers. However, only 40% indicated that their teachers were using the communiques. Only 10% of the principals indicated that they were required to use instructional television by the superintendent or school board and they likewise required their teachers to use the medium. Most items received a positive answer, averaging about 40%. A revised form of the questionnaire containing 53 multiple choice items can be found in Appendix E.

Sampling Opinions of Curriculum Directors and Supervisors

An opinionaire (21 items) similar in format and content to the Teacher and Principal formers was developed and administered to a sample of 34 supervision and curriculum directors who were in attendance at an in-service course on the campus of the University of Georgia during the Winter of 1970. In general, the supervisors felt that there is a strong need for additional materials for use with instructional television, that their local school superintendent supported the use of instructional television, that instructional television is a very wrothwhile educational tool and that the programs are up-to-date in

terms of validity of content. About 67% of the supervisors recommended instructional television for all grade levels and felt that teachers cooperate among themselves in adjusting their teaching schedules to accommodate instructional television viewing. In contrast only about one-third of the supervisors indicated that their teachers watched the communiques and that the communiques were scheduled at an appropriate time. A revised form (48 items) of the Curriculum Directors/Supervisors form of the ITV Questionnaire is found in Appendix F.

Sampling Parent Opinions

In order to complete an evaluation of the full spectrum of the population involved in instructional television, a parent questionnaire was developed which contained eight yes-no questions. These questions centered on the knowledge and attitudes that parents had regarding the use of instructional television in school. This instrument was pilot-tested with a limited group of parents (N=27) in attendance at a PTA meeting at a school in Northeast Georgia. The sample is not representative of any large definable population. The group did serve, however, the purposes of testing the ease of administration of the instrument and indication of the kinds of likely responses.

It was found that approximately 42% of the parents said that they had watched instructional television (programs presented between the hours of 8:30 a.m. and 3:00 p.m. over one of the television stations operated by the Georgia State Department of Education). About one-half of the parents indicated that their children discussed things that they saw on television in school and that they felt instructional television helped their children with homework. About two-thirds of the parents indicated that their children watched instructional television between

the hours of 8:30 a.m. and 3:00 p.m. when they are at home during the school year and that they had read one or more articles related to instructional television in the last year. About half of the parents indicated that their children were required to watch a television program as a homework assignment on special occasions.

It would appear from this very limited sample of parents that they are to some extent knowledgeable of the part that instructional television plays in the education of their children. It would also appear that parents are interested in learning more about the use of this medium in the school.

Appendix G of this report contains a copy of the final form of the parents' questionnaire. There have been no revisions made in the questionnaire.

EFFECTIVENESS AND IMPACT OF INSTRUCTIONAL TELEVISION TEACHER AIDS (COMMUNIQUES AND MANUALS) ON TEACHER BEHAVIOR AND STUDENT LEARNING

The general design of the several evaluation activities associated with the investigation of the effectiveness and impact of teacher communiques and manuals is contained in Chapter 3. Basically the purposes were to (a) develop and apply a set of rating scales aimed at evaluating various content, organizational and physical aspects of these two types of teacher aids, (b) investigate the impact of the aids on teacher knowledge and behavior, and (c) examine student learning under various conditions of teacher use of the aids. The ultimate aim was to use the resulting data as inputs into the evaluation model building activity.

The study was divided into two parts. The first dealt with two telelessons from the second grade social studies series, Wonderful You. This

15 minute - 33 lesson series is intended to guide the child toward a better understanding of what is human about man and how he can become more so. Specific research efforts in this investigation dealt with two lessons concerned with general problems in city planning and the development of the super-capital of Brazil, Brasilia. Focus in this study was on student and teacher learning. The second study used two telelessons from a sixth grade discovery math series, Patterns. The lessons, from the 33 part 30 minute discovery oriented mathematics series, focused on concepts and methods of measuring volume. The focus in this study was on student learning and the impact of the manual and communique on pre and post telelesson teacher behavior.

The manuals and communiques and telelesson tapes were studied by pairs of experienced teachers. After a brief training in stating behavioral objectives, the teachers provided sets of objectives for both teachers and students. A total of 36 teacher and 25 student objectives were generated from the Wonderful You material. Examination of Patterns yielded 48 teacher and 36 student objectives.

Based on the objectives derived using the just described procedure the following instruments were constructed:

(a) A 25 item Wonderful You student achievement test based on telelesson and manual objectives.

(b) A 20 item Wonderful You teacher achievement test based only on the teacher communique objectives.

(c) A 75 item observation schedule, the Patterns Observation Summary, based on the teacher manual and communique objectives. The categories teacher gives, teacher asks, and pupil responds were used for each of the 75 objectives, and

(d) An 18 item Patterns student achievement test based on manual

and television objectives.

In addition 26 item manual and 21 item communique rating scales were constructed. A five point scale (5 = Excellent, ... 1 = Poor) was used.

Teachers and students using the Wonderful You series were identified by the Social Science Curriculum Director of a large Georgia school system and were randomly assigned by teacher to one of three groups; (1) view communique only, (2) view communique and study manual, and (3) study manual only. Two grups of non-ITV users were also identified, and additional groups designated; a (4) no-view no-study group and a (5) student view only group. The final sample sizes are described in Table 3-1. Teachers in groups 1, 2, 3, and 4 met at the same time. Groups 1 and 2 viewed the Wonderful You communique, completed a rating form, and took the achievement test. Group three teachers completed a manual evaluation form and the achievement test. The achievement test was also administered to the teachers in Group 4. After students had viewed the two telelessons during scheduled broadcast time, the achievement test was administered.

The groups for the Patterns study were developed in approximately the same way as those for Wonderful You. One difference being that two different school systems had to be used in order to secure large enough samples. The final sample sizes are described in Table 3-1. A student-view only group was not used in this study as it was felt that the control group provided sufficient data for evaluating the effectiveness of the three treatment combinations.

Communique and manual evaluation forms were administered to the appropriate groups of teachers, and student achievement tests given following scheduled broadcasts of the two telelessons. In addition, a group of junior

college students was given a brief training session in the application of the observation schedule and in test administration. All teachers were observed for approximately 30 minutes immediately before and after each telelesson broadcast.

Evaluation of Communiques

The range of mean ratings (five point scale) for both series communiques was quite large with a modal rating of about three. Although quite similarly evaluated, the Patterns communique tended to receive higher ratings than the Wonderful You manual, probably due to the fact that it was considerably more "methods" oriented. Teachers felt that the poorest characteristic of the communiques was the scheduled showing time (after school), but that both communiques effected organized, accurate, useful, informative and helpful presentations. In general, the group who had studied the appropriate manual material prior to viewing the communique tended to give somewhat higher ratings.

Evaluation of Manuals

As with the communiques, the two series manuals tended to evidence similar ratings. The majority of the ratings were between three and four. It was felt that the material was not at an appropriate level of difficulty for the students. High ratings were given accuracy of material, adequacy of lesson bibliography, readability and practicalness. It was again noted that if a teacher had both viewed the communique and studied the manual, higher ratings tended to be given, particularly with regard to practicalness of follow-up activities. The general physical characteristics (print size, binding, illustration) were rated highly.

Student and Teacher Achievement - Wonderful You

Descriptive statistics resulting from the administration of the

achievement tests to both teachers and students are summarized in Table 5-5. It can be seen that the Wonderful You twenty-item teacher achieve-

TABLE 5-5

Descriptive Statistics for Teacher and Student Achievement Tests

	SERIES					
	Wonderful You				Patterns	
	Teacher		Student		Student	
Group	$\bar{X}$	S	$\bar{X}$	S	$\bar{X}$	S
1. Communique	14.1	2.3	14.1	2.6	11.8	2.7
2. Communique and Manual	14.7	3.2	15.8	2.7	8.7	2.6
3. Manual	13.3	3.6	13.9	2.5	11.7	2.6
4. Control	12.6	2.3	12.0	2.4	8.6	2.6
5. Student View Only			12.9	2.6		

ment test did not show large differences between groups. This was confirmed by a non-significant F-ratio derived from an analysis of variance. It would appear, however, when treatment means are compared with the control, that some benefit can be shown to be derived from studying the manual and/or viewing the communique. The relatively high score of the control group was unexpected and might be evaluated as indicating that the test was not as specific to the television material as thought.

Examination of the student test data reveals quite a different picture of the impact on student learnings as transferred, facilitated or translated by teachers from the teacher aid materials. The student groups whose

teachers studied the manual and reviewed the communique achieved higher than the other groups. As might be expected, there is little difference between those groups whose teachers had studied only the manual or viewed the communique. This eye-ball analysis of the significance of the mean differences was confirmed by a five group one-way analysis of variance ($F = 179.5$, d.f. = 4/448, $P < .01$). Subsequent application of Duncan's New Multiple Range Test (Kramer, 1956) indicated non-chance significant differences between all groups except for the manual only and communique only groups.

Student Achievement - Patterns

The means and standard deviations for the four student Patterns groups are found in Table 2. Again a differential teacher-preparation treatment effect is noted. The unexpected finding that the communique and manual group was not the highest is noted. The students in the manual and communique group achieved approximately as expected when compared with each other and with the control group. But their superiority over the communique and manual group was puzzling. Investigation of the manual and communique groups indicated that they were composed of definitely above average students with respect to both intelligence and achievement. These groups, by chance, had experienced considerable exposure to the content of the telelesson prior to their involvement in the experiment. An analysis of variance was performed which yielded significant results ($F = 70.63$, d.f. = 3/614, $P < .01$). Application of Duncan's New Multiple Range Test (Kramer, 1956) to the differences between means indicated significant differences between the communique only and communique and manual, and control group, and between the manual only and communique and manual and control groups. There was no significant difference between

the communique only and manual only or communique and manual and control groups.

Teacher Behavior - Patterns

Application of the Patterns Observation Summary did not reveal a high frequency of teacher pre or post lesson activity that was tied specifically to the telelesson objectives. It was expected that the teachers exposed to the manual and/or communique would be aware of more activities and perhaps utilize more of them in their classrooms. Although the communique and manual group tended to use more relevant activities, no remarkable data were observed. It is quite likely that the practical limits of time impose restrictions on teacher preparatory activities. There is always a question of reliability of observers and the limited sampling of teacher behavior taken in this study. The observation technique, however, would seem to warrant further study.

RESULTS OF PUBLIC BROADCASTING SURVEY

Recent articles by Siegle[1] and Wade[2] have provided useful information in building an ETV viewer profile. Such a composite would have implications for programming, budgeting, as well as research efforts. Despite the methodological flaws in virtually all surveys of television viewer characteristics, a definable picture is emerging.

The initial intent of the present survey was to pilot test a two page (single sheet) 22 item questionnaire together with the feasibility

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[1]Henry J. Siegle, "A Look at the ETV Audience", Educational Broadcasting Review, 1969, Vol. 3, #5, (October), pp. 23-29.

[2]Serena E. Wade, "Another Look at the ETV Audience", Educational Broadcasting Review, 1970, Vol. 4, #1 (April), pp. 19-21.

of a mail survey methodology. The first 15 questions dealt with demographic data and surveyed household viewing habits and reasons for watching TV. Question 16 allowed for determination of the ETV or non-ETV viewer groups which formed the basic units for analysis. The remaining questions related to viewing habits, favorite programs, reasons for watching ETV, and sources of program information.

The sampling procedure involved the selection of approximately every two hundredth name (excluding businesses) from Southern Bell telephone directories for the eight of ten largest metropolitan areas in Georgia. Atlanta and Athens were not included in the survey as they were already being considered in another study.[3] The survey results from these two cities closely approximate those based on the eighth area survey. A total of 1695 questionnaires together with a cover-letter were mailed. Unfortunately, only a 20% return was realized yielding 319 usable questionnaires. Of these approximately 31% of the respondents said they or members of their families were viewers of public broadcast television. Proximity of income tax and Census activity and a high level of political and civil rights tension to the mailing were judged to have adversely influenced the return rate.

Despite the shortcomings of the methodology just mentioned, the following ETV (as contrasted to the non-ETV) viewer profile is offered.

The head of the household (consisting of a total of three members) where ETV is viewed is approximately 45 years of age with some college training. He is likely to hold a professional or managerial

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[3]Charles S. Thorp, Jr. An Audience Survey of WGTV in the Atlanta Area Unpublished Masters Thesis (School of Journalism), University of Georgia, Athens, Georgia, 1970.

position, own his own home, have two cars and a black and white and a color TV set, and read several daily newspapers and monthly magazines. The non-adult members of the ETV viewers household are likely to be in the 6-12 age group. The ETV household is likely to watch almost four hours of television a day, the greater portion of which is public broadcasting. Major reasons given for watching television (both public and commercial) were related to relaxation and education. Favorite programs tended to be public affairs (Firing Line), cultural (NET Playhouse) and related to personal interests (French Chef). Sesame Street was, of course, a big vote getter.

This profile corresponds closely to others that have resulted from cross-national mail surveys, as well as telephone interviews.

GENERAL CONCLUSIONS

It is felt that the data, experience, and knowledge resulting from the project warrant the following conclusions:

1. A comprehensive, flexible, and internally consistent evaluation model has been developed which can be effectively applied in assessing the operation of educational television in the State of Georgia (See Chapter 4).

In addition to this general conclusion, several specific conclusions have resulted from the individual research activities of the project.

2. Elementary kids like in-school television. The results confirm a uniform general positive attitude which corresponds to Schramm's observation for his young student subjects. As one moves up the grade scale, some differential attitudes can be observed.

3. Teachers, Principals, and curriculum directors are generally favorably disposed toward the quality of instructional television in the State of Georgia.

4. Various physical, content and organizational characteristics of the televised teacher communiques, and teacher manuals used with elementary school level instructional television series are positively evaluated by teachers.

5. Significant student learning results from instructional television.

6. Increased student learning is a function of the nature of teacher self-preparatory activity. If teachers study series manuals and/or view televised communiques, their students learn more than if they do not engage in such activities. Although it is not immediately apparent in teachers upon testing with a relevant achievement test, there is a differential effect on student learning which can be assigned to one or both teacher aids-manuals and/or communiques. Perhaps the exposure to teacher aids does result in some kind of sensitization of the teachers to relevant content and objectives which ultimately get translated and communicated to students.

7. Teachers do not engage in a high frequency of pre or post telelesson activity with their students.

8. In general, exposure to two teacher aids is more influential than a single aid.

9. Great care and training is needed in using classroom teachers to specify instructional objectives from telelesson video tapes useful in the construction of evaluation devices.

10. With certain limitations junior college students can be used to make classroom observations of teacher-student interaction.

11. Use of mailed questionnaires is not the most effective method of surveying public broadcast television viewing

12. Parents are moderately knowledgable about the part played by instructional television in the education of their children

REFERENCES

Advisory Commission on Educational Goals. Goals for education in Georgia. Atlanta: Georgia Department of Education, Georgia Assessment Project, 1969.

Ahmann, J.S. and Glock, M.D. Evaluating pupil growth. Boston: Allyn Bacon, 1967.

Alabama, University of. Learning aural-oral Spanish skills by television. NAEB Journal, 1961, 20, 1-2.

Amiran, G.T. The retention by elementary school children of natural science material and of science attitude and interest changes following a program of science teaching by television. Dissertation Abstracts, 1963, 23, 2414.

Anderson, R.C. The comparative field experiment: an illustration from high school biology. Proceedings of the 1968 invitational conference on testing problems. Princeton, N.J.: Educational Testing Service 1969, pp. 3-30.

Ayers, J.B., Johnson, C.E., and Shearron, G.F. An exemplary program in higher education for chemists, engineers and chemistry teachers. GEM Bulletin 69-6, Georgia Educational Models, College of Education, University of Georgia, Athens, Georgia, 1969.

Banghart, F.W. Educational systems analysis. New York: The Macmillan Co., 1969.

Bonjean, C.M., Hill, R.J., and McLemore, S.D. Sociological measurement: an inventory of scales and indices. San Francisco: Chandler Publishing Company, 1967.

Brown, Barbara J. A history of the development of the educational television services division of the Georgia department education. Unpublished Masters Thesis, Pennsylvania State University, 1969.

Carpenter, C.R., and Greenhill, L.P. Instructional television research. Report No. Two. University Park, Pa. Pennsylvania State University Spring, 1958.

Case, C.M. The application of PERT to large-scale educational research and evaluation studies. Educational Technology, 1969, 9, 79-83.

Chabe, A.M. An experiment with closed circuit television in teacher education. Peabody Journal of Education, 1962, 40, 24-30.

Clarke, P. Increasing the audience for educational television. Audio-Visual Communications Review, 1965, 13, 183-195.

Coleman, W.H., Dutton, E., & Bookout, J.C. Learning aural-oral Spanish skills by television. University: University of Alabama, 1960.

Cook, D.L. Program evaluation and review technique: applications in education. Washington, D.C.: U.S. Department of Health Education and Welfare, 1966. (Cooperative Research Monograph, No. 17, U.S. Government Printing Office).

Crane, P. and C.C. Abt A model for curriculum evaluation. Educational Technology, 1969, 9(10), 17-25.

Culver, K.B. New and promising uses of ITV. Audiovisual Instruction, 1967, 12, 910-914.

Diamond, R.M. Let's learn from our mistakes: A hard look at instructional television. Audio-Visual Communications Review, 1967, 12, 232-234.

Driscoll, J.P. Can TV Improve college training? NAEB Journal, 1959, 18, 16(20).

Englehart, M.D., Schwachtgen, E.C., & Nee, M.N. Report on the instruction experiment in high school physics in the Chicago public schools. American Journal of Physics, 1958, 26, 347-349.

Freeman, S.L. Teachers and television: The master-slave relationship. Clearing House, 1967, 42, 198-203.

French, J.L. A comparison of student attitudes in three instructional conditions: small classroom, instructional television, and large lecture hall. University of Missouri at Columbia, August 21, 1963 (Mimeographed).

Gerberich, J.R., Green, H.A. and Jorgensen, A.N. Measurement and evaluation in the modern school. New York: David McKay, 1962.

Gerletti, R.C. "Producing an ITV program." Educational Television, 1969, 1, (#18), 15-17.

Gordon, O.J., Engar, K.M., & Shupe, D.R. Challenging the superior student by making the study of Russian available in the elementary school curriculum via television. U.S.O.E. Grant No. 7-54-0050-024, Salt Lake City: University of Utah, 1963.

Greenhill, L.P. A review of some trends in research on instructional television and film. Abstracts of Research on Instructional Television. April, 1964.

Gropper, G.L. Does "programmed" television require active responding? Audio-Visual Communications Review, 1967, 15, 5-22.

Hall, J. Educational television project, third year, 1950-60. NAEB Journal, 1962, 21, 1-2.

Handleman, S.D. A comparative study of teacher attitudes toward teaching by closed circuit television. Dissertation Abstracts, 1960, 21, 1289.

Hansen, M.H., Hurwitz, W.N., and Madow, W.G., Sample survey methods and theory, New York: John Wiley and Sons, 1953.

Henderson R.M. After school . . .ETV will be just in style. Kentucky School Journal, 1967, 46, 38-40.

Himmler, M.L. An analysis and evaluation of a television demonstration of the teaching of fifth-grade reading, arithmetic, and French. Dissertation Abstracts, 1957, 17, 2467.

Howell, C.W. A study of the utilization of Georgia Educational Television science series by classroom teachers of grades 4-7. Unpublished Doctoral dissertation, University of Georgia, Athens, Georgia, 1968.

Jacobs, J.N. & Bollenbacher, J.K. Teaching ninth grade biology by television. Audio-visual Communications Review, 1960, 8, 176-191.

Klasek, C.B. What can ITV mean to the classroom teacher? Kentucky School, 1967, 46, 23-26.

Kramer, C.Y. Extension of multiple range tests to group means with unequal numbers of replications. Biometrics, 1956, 12, 307-310.

Krejcie, R.V. and Morgan, D.W. Determining sample size for research activities. Educational and Psychological Measurement, 1970, 30, 607-610.

Kuhns, W. Use the TV environment. Catholic School Journal, 1968, 68, 52-53.

LaPenna, R.J. A study to effect the design, implementation, and evaluation of a model program for in-service training concerned with the effective utilization of instructional television by classroom teachers, Unpublished doctoral dissertation, Lehigh University, 1967.

Lord, F.M. Estimating norms by item-sampling. Educational and Psychological Measurement, 1962, 22, 259-267.

Maccia, G.S. "An educational theory model: General systems theory". Occassional Paper 62-126, Center for the Construction of Theory in Education, Bureau of Educational Research and Service. Ohio State University, Columbus, Ohio. 1962.

Mager, R.F. Preparing instructional objectives. San Francisco: Fearon Publishers, Inc. 1962.

McLuhan, M. Understanding media: The extensions of man. New York: Signet, 1964.

Medley, D.M.; Impellitteri, J.T. and Smith, L.H. Coding teachers' verbal behavior in the classroom. In Simon, Anita, and Boyer, E.G. (Eds.) Mirrors for Behavior. Philadelphia: Research for Better Schools, 1967.

Metfessel, N.S. and Michael, W.B. A paradigm involving multiple criterion measures for the evaluation of the effectiveness of school programs. Educational and Psychological Measurement, 1967, 27, (#4), 931-943.

Morgan, J.D. An investigation of pupil achievement by objective tests in the Washington County closed-circuit television project. Dissertation Abstracts, 1963, 23, 4576.

Oppenheim, A.N. Questionnaire design and attitude measurement. New York: Basic Books, Inc., 1966.

Orr, D.B. The evaluation of television instruction. Audio-Visual Communications Reviews, 1966, 14, 363-370.

Ouzts, D.K. An historical study of educational television in Georgia. Unpublished Masters Thesis. University of Georgia, 1965.

Palmer, E.L. Television neglected strengths. Paper presented at Sixth Annual Symposium on Research and Utilization of Educational Media for Teaching the Deaf. February 13, 1970.

Parten, M.B., Surveys, polls, and samples: practical procedures, New York: Harper and Brothers, 1950.

Payne, D.A. The specification and measurement of learning outcomes. Waltham, Massachusetts: Blaisdell, 1968.

Perrodin, A.F. Children's attitudes toward elementary school science. Science Education, 1966, 50, (#3), 214-218.

Pfeiffer, J. New look at education: systems analysis in our schools and colleges. New York: Odyssey Press, 1968.

Planinc, C.M. Major factors which limit or restrict the use of Instructional television in schools, Unpublished doctoral dissertation, Indiana University, 1967.

Report and Recommendations of the Carnegie Commission on Educational Television. Public Television, New York: Harper & Row, 1967.

Rothchild, T.H., and Lastinger, R.L. The Florida West Coast project for the utilization of television large class teaching: First year report, July 1959 to June 1960. NAEB Journal, 1961, 20, 1-2.

Schlask, F.O. The Planning, production and evaluation of two experimental series of classroom telecasts for use in the intermediate grades in the Columbus, Ohio area. Speech Monographs, 1966, 23, 121.

Schramm, W. What we know about learning from instructional television. In Stanford University, Institute for Communication, Educational television. Stanford: Institute for Communication Research, 1962.

Schramm, W. The people look at educational television. Stanford: Stanford University Press, 1963.

Schramm, W. The effects of television on children and adolescents. Amsterdam: Unesco, 1964.

Schramm, W., Lyle, J. and Parker, E.B. Television in the lives of our children. Stanford, California: Stanford University, Press, 1961.

Shaw, M.F. and Wright, J.M. Scales for the measurement of attitudes. New York: McGraw-Hill Book Company, 1967.

Siegle, H.J. A look at the ETV audience. Educational Broadcasting Review 1969, 3, (#5), 23-29.

Siegle, H.J. Reply, Educational Broadcasting Review, 1970, 4, (#1), 21-23.

Silagyi, D.V. A critical analysis of attitudes of selected elementary students toward television teaching in the Detroit television teaching project. Dissertation Abstracts, 1961, 22, 128.

Spatafora, J.B. ETV need not be tame. Audiovisual Instruction, 1969, 14, 33.

Stake, R.E. The countenance of educational evaluation. Teachers College Record, 1967, 68, (#7), 523-540.

Stephan, F.F. and McCarthy, P.J., Sampling opinions (An Analysis of Survey Procedure) New York: John Wiley and Sons, 1958.

Stufflebeam, D.L. Toward a science of educational evaluation. Educational Technology, 1968, 8, 5-12.

Swain, E.I. Evaluation and the work of the teacher. Belmont, California: Wadsworth, 1969.

Taylor, P.A. and Maguire, T.O. A theoretical evaluation model. The Manitoba Journal of Educational Research, 1966, 1, 12-17.

Thomas, J.A. Cost-benefit analysis and the evaluation of educational systems. 1968 Invitational Conference on Testing Problems. Princeton, N.J. Educational Testing Service, 1969.

Thorp, Jr., C.S. An audience survey of WGTV in the Atlanta area. Unpublished Master's Thesis, University of Georgia, Athens, Georgia, 1970.

U.S. Department of Health, Education and Welfare. Research in instructional television. Washington: U.S. Gov't Printing Office, 1967, Catelog No. FS 5.234.34041.

Underhilld, R.R. A study of curriculum change: MPATI. Unpublished paper, Ohio State University, 1969.

Wade, Serena E. Another look at the ETV audience. Educational Broadcasting Review, 1970, 4, (#1), 19-21.

Wade, W.L. Instructional television utilization guidelines for school administrators, unpublished doctoral dissertation, UCLA, Los Angeles, 1965.

Webb, Et.al., Unobstrusive measures: nonreactive research in the social sciences, Chicago: Rand McNally. 1966.

Westley, B.H. & Jacobson, H.K. Modern math on TV: its impact on pupils and teachers. Audio-Visual: Communications Review, 1963, 10, 179-185, 328-333.

Yelon, S.L. and R.O. Scott. A strategy for writing objectives. Dubuque, Iowa: Kendall/Hunt Publishing Company. 1970.

Zettl, H. Toward a classification of television feedback. Audio-Visual Instruction, 1967, 12, 934-936.

Appendix A

OVERVIEW OF SAMPLING PROCEDURES

Type of Sampling	Brief Description	Advantages	Disadvantages
A. Simple Random	Assign to each population member a unique number; select sample items by use of random numbers	1. Requires minimum knowledge of population in advance 2. Free of possible classification errors 3. Easy to analyze data and compute errors	1. Does not make use of population which researcher may have 2. Larger errors for same sample size than in stratified sampling
B. Systematic	Use natural ordering or order population; select random starting point between 1 and the nearest integer to the sampling ratio (N/n); select items at interval of nearest integer to sampling ratio	1. If population is ordered with respect to pertinent property, gives stratification effect, and hence reduces variability compared to A 2. Simplicity of drawing sample; easy to check	1. If sampling interval is related to a periodic ordering of the population, increased variability may be introduced 2. Estimates of error likely to be high where there is stratification effect
C. Multistage random	Use a form of random sampling in each of the sampling stages where there are at least two stages	1. Sampling lists, identification, and numbering required only for member of sampling units selected in sample 2. If sampling units are geographically defined, cuts down field costs (i.e., travel)	1. Errors likely to be larger than in A or B for same sample size 2. Errors increase as number of sampling units selected decreases
1. With probability proportionate to size	Select sampling units with probability proportionate to their size	1. Reduces variability	1. Lack of knowledge of size of each sampling unit before selection increases variability
D. Stratified 1. Proportionate	Select from every sampling unit at other than last stage a random sample proportionate to size of sampling unit	1. Assures representativeness with respect to property which forms basis of classifying units; therefore yields less variability than A or C	1. Requires accurate information on proportion of population in each stratum, otherwise increases error

Type of Sampling	Brief Description	Advantages	Disadvantages
		2. Decreases chance of failing to include members of population because of classification process 3. Characteristics of each stratum can be estimated, and hence comparisons can be made	2. If stratified lists are not available, may be costly to prepare them; possibility of faulty classification and hence increase in variability
2. Optimum allocation	Same as 1 except sample is proportionate to variability within strata, as well as their size	1. Less variability for some sample size than 1	1. Requires knowledge of variability of pertinent characteristics within strata
3. Disproportionate	Same as 1 except that size of sample is not proportionate to size of sampling unit but is dictated by analytical considerations or convenience	1. More efficient than 1 for comparison of strata or where different errors are optimum for different strata	1. Less efficient than 1 for determining population characteristics; i.e., more variability for same sample size
E. Cluster	Select sampling units by some form of random sampling; ultimate units are groups; select these at random and take a complete count of each	1. If clusters are geographically defined, yields lowest field costs 2. Requires listing only individuals in selected clusters 3. Characteristics of clusters, as well as those of population can be estimated 4. Can be used for subsequent samples since clusters, not individuals, are selected, and substitution of individuals may be permissible	1. Larger errors for comparable size than other probability samples 2. Requires ability to assign each member of population uniquely to a cluster; inability to do so may result in duplicates or omission of individuals
F. Stratified Cluster	Select clusters at random from every sampling unit	1. Reduces variability of plain cluster sampling	1. Disadvantages of stratified sampling added to those of cluster sampling

Type of Sampling	Brief Description	Advantages	Disadvantages
			2. Since cluster properties may change, advantage of stratification may be reduced and make sample unusable for later research
G. Repetitive: Multiple or Sequential	Two or more samples of any of the above types are taken, using results from earlier samples to design later ones, or determine if they are necessary	1. Provides estimates of population characteristics which facilitate efficient planning of succeeding sample, therefore reduces error of final estimate 2. In the long run reduces number of observations required	1. Complicates administration of field work 2. More computation and analysis required than in nonrepetitive sampling 3. Sequential sampling can only be used where a very small sample can approximate representativeness and where the number of observations can be increased conveniently at any stage of the research
H. Judgement	Select a subgroup of the population which, on the basis of available information can be judged to be representative of the total population; take a complete count or subsample of this group	1. Reduces cost of preparing sample and field work, since ultimate units can be selected so that they are close together	1. Variability and bias of estimates cannot be measured or controlled 2. Requires strong assumptions or considerable knowledge of population and subgroup selected
1. Quota	Classify population by pertinent properties; determine desired proportion of sample from each class; fix quotas for each observer	1. Same as above 2. Introduces some stratification effect	1. Introduces bias of observers' classification of subject and nonrandom selection within classes

Source Unknown

ED 076617

Appendix B

LOWER ELEMENTARY GRADE FORM OF STUDENT OPINIONNAIRE

Directions for Administering

"How I Feel About Television In School"

Say: "Some professors at the University of Georgia are interested in how children feel about television in school. I am going to read you some questions about how you might feel toward television in school. Then I will ask you to show me on a paper how you feel. I will not see your answers to the questions I read. They will be sent to the University. Do not write your name on your paper."

Hand out test paper to each child. Be sure each child has a pencil for marking the test.

Say: "If you are a boy write "B" in the box at the top of your paper. If you are a girl write a "G" in the box at the top of your paper. You will show how you feel by marking an X (write X on the board) on the face that shows how you feel. You will mark one face for each question that I read. Be sure that you mark the face for the question I am reading."

Sample Questions

Draw the following four faces on the board.

Say: "These faces go from very happy (Point to face on Left) to less happy (point to second face from left), to rather unhappy (point to second face from right), to very unhappy (point to face on right). Notice, that on your papers, there are the same four faces for each number. I will read a question to you for each set of faces and you put an X (point to X which you have drawn on board) on the one face in the set that best shows how you feel about what the question is asking. Be sure the X covers all of the face, like this (draw an X through one of the faces on the board)."

Say: "Let's do the sample questions at the beginning of your sheet. Find the set of faces next to the letter "A."

Say: "How do you feel about eating ice cream? Mark an X on the face in Set A that best describes how you feel about eating ice cream. How many of you marked the very happy face? Raise your hands. How many of you marked the very unhappy face? Raise your hands."

Say: "Go to Set B. How do you feel when you get hurt? Mark the face in Set B that shows how you feel when you get hurt?" (Ask for a boy's response and then for a girl's response.)

Say: "Go to Set C. How do you feel about playing with dolls? Mark the face in Set C that shows how you feel about playing with dolls. Perhaps some of you marked one of the middle faces this time to show that you feel less strongly about playing with dolls."

Say: "Do you get the idea of how to show how you feel by marking one face for each question?"

For each question you read be sure to say the number and be sure all the children are marking the set of faces that correspond to the number of the question you are reading.

Use this format for reading each of the questions: read the number of the question and then read the question.

Say: "Let's begin. Find Number 1."

Read question #1 and allow a silent count of four to yourself before going on to question #2. Allow more time between questions if your class needs it but try to keep the intervals between questions equivalent.

After all questions have been asked, choose a child to collect all of the answer sheets.

1. How do you feel about school?
2. How do you feel about watching television at home?
3. How do you feel about watching television in school?
4. How do you feel about learning from television in school?
5. How do you feel about the television teachers?
6. How do you think the boys and girls in this class feel about television in school?
7. How do you feel about things the television teacher tells you to do?

8. How do you feel about the way your classroom teacher does things that the television teacher suggests?

9. How do you feel about seeing the same teachers on television each week?

10. How do you think your classroom teacher feels about television in school?

11. How do you feel when the television set is turned off in your classroom?

12. How do you feel about how good your classroom television looks and sounds when it is on?

13. How do you feel about the things that the television teacher uses?

14. How do you feel when you think about television?

15. How do you think your mother and father feel about television in school?

16. How do you feel about the pictures and drawings that the teacher on television uses in talking about the lesson?

17. How do you feel about the things (that I do) (that your classroom teacher does) before you watch the television in school?

18. How do you feel about the things (that I do) (that your classroom teacher does) after you watch television in school?

19. How do you feel about the teachers in (your) (our) school?

20. How do you feel about the questions that you have been asked today?

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Appendix C

Boy _____ Girl _____

Age _____ Grade _____

School _____

Directions: Below are 15 questions that can be answered either yes or no. Please circle what you believe to be the right answer for you.

Yes No 1. Do you like to watch television in school?

Yes No 2. Do you think that watching television in school helps you with your school work?

Yes No 3. Do you ever watch television in school?

Yes No 4. When you are at home during school hours, do you ever watch the same shows as you see in school?

Yes No 5. Does your teacher ever talk about a television show before you see it?

Yes No 6. Do you ever do any of the things that the television teacher tells you to do?

Yes No 7. Do you like the television teachers?

Yes No 8. Does your teacher ever talk about a television show after you see it?

Yes No 9. Do you watch television in school everyday?

Yes No 10. Does your teacher ever assign a television program for you to view at home?

Yes No 11. Do you think that you learn from watching television in school?

Yes No 12. Do you keep a television notebook?

Yes No 13. Have any of the television teachers ever visited in your school?

Yes NNo 14. Have you done a project as a result of watching a television program in school.

Yes No 15. Do you think that television in your school has improved your educational opportunities.

Boy _____ Girl _____

Age _____ Grade _____

School _____

Directions: Complete these sentences with the first thought which comes to you.

1. Television in school is _____.
2. My favorite television program that I see in school is _____

_____.
3. Our television set in school is _____

_____.
4. When it is time for our television lesson _____

_____.
5. When our television lesson is over _____

_____.
6. Television lessons are _____.
7. We watch television in school because _____

_____
8. A good television lesson _____.
9. Television lessons should _____

_____
10. A good television teacher is _____.
11. Television notebooks _____

_____
12. I like to watch television in school better than _____

_____.
13. Write three sentences in the following space about you and television in school.

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Appendix D

INSTRUCTIONAL TELEVISION QUESTIONNAIRE - TEACHER FORM

Directions: Please rate each statement by selecting an appropriate number. Mark your choice on the special answer sheet with a soft lead pencil if at all possible. If a particular statement does not apply to you or your situation, or you honestly feel you cannot make a judgment about it, leave the space for that item blank. If you wish to change a rating, be sure to erase completely before making a new mark. Note that the answer sheet is set up so that you make ratings to questions numbered sequentially across the page from left to right.

In the first seventeen questions on this opinionnaire we are asking you to make some evaluative judgments about various aspects of instructional television. Again note that if a question does not apply to you or your situation leave the answer space blank.

Rate: 1 = poor 2 = fair 3 = average 4 = above average 5 = excellent

Relationship of Instructional Television to Students

1. Relevance of subject matter covered in instructional television lessons to the needs of your students.

2. The outside projects that your students have developed as a direct result of an instructional television program or series.

3. Outlook that your students have each week for the lessons they see on television.

Relationship of Instructional Television to School Administrators

4. Support that your local school superintendent gives to the use of instructional television in your school system.

5. Support that your local curriculum director or coordinator gives to the use of instructional television in your school system.

6. Support that your principal gives to the use of instructional television in your school.

Supplementary Materials

7. Quality of the supplementary materials available for use before and after instructional television programs.

8. Quantity of the supplementary materials available for use before and after instructional television programs.

Rate: 1 = poor
2 = fair
3 = average
4 = above average
5 = excellent

Utilization of Instructional Television

9. The advice and assistance that your curriculum director or supervisor is able to give on the utilization of instructional television.

10. The value of workshops or meetings conducted by the Georgia Educational Television Network Utilization staff. (Omit this question if you have not attended a meeting within the last twelve months.)

11. Training you had as an undergraduate in college on the use of instructional television. (If you had none, omit this question.)

Instruction and Scheduling of Instructional Telvision

12. Format of instructional television programs.

13. Personality of the television teachers.

14. Length of the instructional television programs that you use with your classes.

15. Relationship of your scheduled classroom activities with instructional television programs.

16. Influence that your experience with instructional television has had on your pursuing additional academic work.

17. Overall worth of instructional television in the school curriculum.

We now ask you to shift your thinking to more quantitative questions. Questions 18 through 55 deal with aspects of instructional television which require judgments of frequency. A new set of four rating numbers is used. The numbers and their interpretations are as follows:

Rate: 1 = never
2 = sometimes
3 = usually
4 = always

Relationship of Instructional Television to Students

18. Do your students keep a television notebook?

19. Do your classroom tests include items directly related to what your students learned from instructional television?

20. Do you prepare your students for an instructional television program?

21. Degree to which you feel it is practical for you to prepare your students for a particular instructional television program?

Rate: 1 = never 3 = usually
2 = sometimes 4 = always

22. How often do you conduct follow-up activities with your students after they have viewed an instructional television program?

23. Extent to which you feel that the content of instructional television programs recommended for your students is at the appropriate grade level?

24. Do you feel that the presentation of instructional television programs recommended for your students is at the appropriate grade level?

25. Do you think that your students enjoy watching instructional television?

Relationship of Instructional Television to School Administrators

26. Does your principal cooperate with you and your fellow teachers in adjusting the overall schedule of the school in order to view instructional television?

Instruction and Scheduling of Instructional Television

27. Extent to which you find it difficult to organize your classroom activities around the instructional television schedules?

28. Would you like to be able to repeat having your class view a particular instructional television program at a later time after its initial showing?

29. Does the present schedule for instructional television interfere with the organization of your instructional program?

30. Do you cooperate with your fellow teachers in adjusting class meetings in order to view instructional television programs?

31. Is the decision to use a particular instructional television series made by you?

32. Is the decision to use a particular instructional television series made by your department head?

33. Is the decision to use a particular instructional television series made by your principal?

34. Is the decision to use a particular instructional television series made by a group of you and your fellow teachers?

35. Extent to which you feel that the programs on instructional television are up-to-date in terms of the validity of their content?

36. Extent to which you as a teacher, feel that you learn subject matter content as a result of watching instructional television?

Rate: 1 = never 3 = usually
2 = sometimes 4 = always

37. Extent to which you feel that you learn teaching techniques from watching the television instructor?

38. Extent to which you tend to organize your classroom activities around an instructional television lesson or lessons?

39. Extent to which you feel that the use of instructional television tends to lend structure to your classroom lesson?

40. Extent to which you feel that the use of instructional television causes you to plan your lessons more closely?

41. Extent to which you think that the instructional television presentations are appropriate for the grade level for which they are designed?

In order for us to make as much sense as possible out of the data, our research staff would like to obtain some information about the questionnaire respondents.

Personal Data and Use of Instructional Television

42. If you did not use instructional television last year, but are using it this year, why?

1) set not available last year but available this year.
2) first year of teaching school.
3) felt that shows last year were not appropriate for group I taught.
4) could not schedule shows.
5) unaware of how to use instructional television.

43. If you used instructional television last year but you are not using it this year, why?

1) set not available.
2) cannot schedule appropriate programs for class.
3) feel that it is a waste of time.
4) cannot integrate programs into the curriculum that I am teaching under.

44. Principle grade level that you teach.

1) K or 1
2) 2 or 3
3) 4 or 5
4) 6 or 7
5) 8 or above

45. Your sex.
    1) male.
    2) female

46. Number of years that you have been teaching including this year.

    1) 1
    2) 2 to 3
    3) 4 to 6
    4) 7 to 10
    5) more than 10

47. Your present level of certification.

    1) T-4, B-4, or XB-4
    2) T-5, B-5
    3) TS-6
    4) Other

48. Highest college degree or certificate held. (Check only one.)

    1) Bachelor's
    2) Master's
    3) Specialist (6th year)
    4) Doctorate
    5) None

49. Your age.

    1) Under 25
    2) 26-35
    3) 36-45
    4) 46-55
    5) Over 55

50. Do you have a TV set in your classroom or access to a set?

    1) Yes
    2) No

51. Do you use it for Georgia In-School television series?

    1) Yes
    2) No

If you at present or have at some time used telecourses or telecourses and the communiques that accompany the series, please answer the following questions. If not return your answer sheet to the person designated by your principal. Many thanks!

52. How many series do you use?

    1) 1
    2) 2
    3) 3
    4) More than 3

53. How many ITV telelessons (including repeats) do you use during an average school week?

1) One
2) Two
3) Three
4) Four
5) Five or more

54. To what extent do you generally use a series?

1) on a weekly basis
2) in two or more lesson units
3) selected programs only

55. To what extent do you presently view the communique related to ETV series you use in your classroom?

1) Not at all
2) Occasionally
3) Most of the time
4) All the time

56. If you do not view the communique at present time, how long has it been since you used them?

1) Never used them
2) The first year I used the series only.
3) The first several years I used the series.

Questions 57 through 61 are in the form of statements. Please rate each statement according to the following scale:

1 = Poor	3 = Average	5 = Excellent
2 = Fair	4 = Good	

57. The extent to which the communique will aid you in your classroom teaching.

58. Organization of the communique.

59. Ability to incorporate teaching techniques suggested by the communiques.

60. Format of communiques.

61. Overall worth of the communiques.

For the following question just select the alternative that best expresses your feeling.

62. Please suggest, what you feel to be the most appropriate time for you to view the communiques.

1) Before school (in the A.M.)
2) During school hours.
3) At the time they are presently aired.
4) Evening hours (after 7:00 p.m.)
5) Saturday

ED 076620

Appendix E

Principal Form

EVALUATION OF INSTRUCTIONAL TELEVISION

The University of Georgia in cooperation with the Georgia State Department of Education is developing a model for the evaluation of the Georgia State Educational Television Network. In order to help us design and develop this model, we would like your opinion and ideas about how instructional television is used in your school. Instructional television is broadcast Monday through Friday between the hours of 8:00 a.m. and 3:00 p.m. on one of ten television stations operated or leased by the Georgia State Department of Education. Attached you will find a brief questionnaire that has been developed for your particular group, that is, principals, teachers, supervisors, parents, children, etc. This data gathering device is the first of several that are being developed. All information will remain confidential and will be used for statistical purposes only. We appreciate your sharing with us your real feelings and honest answers to all questions.

INSTRUCTIONAL TELEVISION QUESTIONNAIRE - PRINCIPAL FORM

Directions: Please rate each statement by selecting an appropriate number. Mark your choice on the special answer sheet with a soft lead pencil if at all possible. If a particular statement does not apply to you or your situation, or you honestly feel you cannot make a judgment about it, leave the space for that item blank. If you wish to change a rating be sure to erase completely before making a new mark. Note that all the answer sheet is set up so that you make ratings to question number sequentially across the page from left to right.

In the first twenty-one questions on this opinionnaire we are asking you to make some evaluative judgments about various aspects of instructional television. Again note that if a question does not apply to you or your situation, leave the answer space blank.

Rate: 1 = poor 2 = fair 3 = average 4 = above average 5 = excellent

Relationship of Instructional Television to Students

1. Relevance of subject matter covered in instructional television lessons to the needs of your students.

2. The outside projects that your students have developed as a direct result of an instructional television program or series.

3. Outlook that your students have each week for the lessons they see on television.

Relationship of Instructional Television to School Administrators

4. Support that your local school school superintendent gives to the use of instructional television in your school system.

5. Support that your local school board gives to the use of educational television in your school system.

6. Support that your local curriculum director or coordinator gives to the use of instructional television.

Supplementary Materials

7. Quality of the supplementary materials available for use before and after instructional television programs.

8. Quantity of the supplementary materials available for use before and after instructional television programs.

Rate: 1 = poor 3 = average 5 = excellent
2 = fair 4 = above average

Utilization of Instructional Television

9. The advice and assistance that your curriculum director or supervisor is able to give your teachers on the utilization of instructional television.

10. The value of workshops or meetings conducted by the Georgia Educational Television Network Utilization staff. (Omit this question if you or your teachers have not attended a meeting within the last twelve months.)

11. Training you had as an undergraduate in college on the use of instructional television. (If you had none, omit this question.)

Instruction and Scheduling of Instructional Television

12. Format of instructional television programs.

13. Personality of the television teachers.

14. Length of the instructional television programs that are used by your teachers.

15. Relationship of your school's scheduled activities with instructional television programs.

16. Overall worth of instructional television in the school curriculum.

Communique

17. Extent to which the teacher communiques aid your teachers in the classroom.

18. Organization of the communiques.

19. Format of the communiques.

20. Overall worth of the communiques.

21. Scheduled viewing times of the communiques.

We now ask you to shift your thinking to more quantitative questions. Questions 22 through 45 deal with aspects of instructional television which require judgments of frequency. A new set of four rating numbers is used. The numbers and their interpretations are as follows:

Rate:
1 = never
2 = sometimes
3 = usually
4 = always

Relationship of Instructional Television to Students

22. Do students in your school keep television notebooks?

23. Do your teacher's classroom tests include items directly related to what their students learned from instructional television?

24. Do your teachers prepare their students for an instructional television program?

25. Degree to which you feel it is practical for your teachers to prepare their students for a particular instructional television program?

26. How often do your teachers conduct follow-up activities with their students, after they have viewed an instructional television program?

27. Extent to which you feel that the content of instructional television programs recommended for your students is at the appropriate grade level?

28. Do you feel that the presentation of instructional television programs recommended for your students is at the appropriate grade level?

Instruction and Scheduling of Instructional Television

29. Do you feel that your teachers would like to be able to repeat having a class view a particular instructional television program at a later time after its initial showing?

30. Does the present schedule for instructional television interfere with the organization of your instructional program?

31. Do your teachers cooperate with one another in adjusting their class meetings in order that their students may view instructional television programs?

32. Is the decision to use a particular instructional television series in your school made by you?

33. Is the decision to use a particular instructional television series in your school made by each individual teacher?

34. Is the decision to use a particular instructional television series in your school made by your department heads?

35. Is the decision to use a particular instructional television series in your school made by your curriculum coordinator?

36. Extent to which you feel that the programs on instructional television are up-to-date in terms of validity of their content?

37. Extent to which you feel your teachers learn subject matter content as a result of watching instructional television?

38. Extent to which you feel your teachers learn teaching techniques from watching the television instructor?

39. Extent to which you feel that your teachers organize their classroom activities around instructional television lessons?

40. Extent to which you feel that the use of instructional television tends to lend structure to the classroom lesson in your school?

41. Extent to which you feel that the use of instructional television causes your teachers to plan their lessons more closely?

42. Extent to which you feel that the instructional television presentations are appropriate for the grade level for which they are designed?

Relationship of Instructional Television to Parents and PTA Groups

43. Do parents of your students ever discuss instructional television with you?

44. Does your PTA ever discuss the use of instructional television?

45. Does your PTA ever give financial aid toward the purchase of materials or equipment related to instruction via television?

In order for us to make as much sense as possible out of the data, our research staff would like to obtain some information about the questionnaire respondents. Would you take a last few minutes and answer the following questions?

46. Your sex.

1) male
2) female

47. Your age.

1) Under 25
2) 25-35
3) 36-45
4) 46-55
5) Over 55

48. Number of years you have been a principal, including this year.

1) 1
2) 2-5
3) 6-10
4) 11-15
5) more than 15

49. Highest college degree or certificate held. (Check only one.)

1) Bachelor's
2) Master's
3) Specialist (6th year)
4) Doctorate

50. Major teaching experience, while a classroom teacher.

1) elementary grades
2) junior high grades
3) senior high grades

51. Number of teachers in your school

1) less than 10
2) 11-15
3) 16-20
4) 21-25
5) more than 25

52. Number of television sets available in your school

1) 0
2) less than 3
3) 4-8
4) 9-15
5) more than 15

53. Is your school primarily considered an

1) elementary school
2) elementary-junior high school combination
3) elementary-junior high-senior high school combination
4) other

ED 076621

Appendix F

Curriculum Directors

Supervisors Form

EVALUATION OF INSTRUCTIONAL TELEVISION

The University of Georgia in cooperation with the Georgia State Department of Education is developing a model for the evaluation of the Georgia State Educational Television Network. In order to help us design and develop this model, we would like your opinion and ideas about how instructional television is used in your school system. Instructional television is broadcast Monday through Friday between the hours of 8:30 a.m. and 3:00 p.m. on one of ten television stations operated or leased by the Georgia State Department of Education. Attached you will find a brief questionnaire that has been developed for your particular group, that is supervisors, principals, teachers, parents, children, etc. This data gathering device is the first of several that are being developed. All information will remain confidential and will be used for statistical purposes only. We appreciate your sharing with us your feelings and honest answers to all questions.

INSTRUCTIONAL TELEVISION QUESTIONNAIRE - SUPERVISOR FORM

Directions: Please rate each statement by selecting an appropriate number. Mark your choice on the special answer sheet with a soft lead pencil if at all possible. If a particular statement does not apply to you or your situation, or you honestly feel you cannot make a judgment about it, leave the space for that item blank. If you wish to change a rating be sure to erase completely before making a new mark. Note how the answer sheet is set up so that you make ratings to questions number sequentially across the page from left to right.

In the first nineteen questions on this opinionnaire we are asking you to make some evaluative judgments about various aspects of instructional television. Again note that if a question does not apply to you or your situation leave the answer space blank.

Rate: 1 = poor 2 = fair 3 = average 4 = above average 5 = excellent

Relationship of Instructional Television to Students

1. Relevance of subject matter covered in instructional television lessons to the needs of your students.

2. Outlook that your students have each week for the lessons they see on television.

Relationship of Instructional Television to School Administrators

3. Support that your local school superintendent give to the use of instructional television in your school system.

4. Support that your local school board gives to the use of instructional television in your school system.

5. Support that your local principals give to the use of instructional television.

Supplementary Materials

6. Quality of the supplementary materials available for use before and after instructional television programs.

7. Quantity of the supplementary materials available for use before and after instructional television programs.

Utilization of Instructional Television

8. The value of workshops or meetings conducted by the Georgia Educational Television Network Utilization staff. (Omit this question if you or your teachers have not attended a meeting within the last twelve months.)

9. Training you had as an undergraduate in college on use of instructional television. (If you had none, omit this question.)

Rate: 1 = poor 3 = average 5 = excellent
2 = fair 4 = above average

Instruction and Scheduling of Instructional Television

10. Format of instructional television programs.

11. Personality of the television teachers.

12. Length of the instructional television programs.

13. Overall worth of instructional television in the school curriculum.

14. General relationship in your system of school's scheduled activities with instructional television programs.

Communiques

15. Extent to which the teacher communiques aid your teachers in the classroom.

16. Organization of the communiques.

17. Format of the communiques.

18. Overall worth of the communiques.

19. Scheduled viewing times of the communiques.

We now ask you to shift your thinking to more quantitative questions. Questions 20 through 39 deal with aspects of instructional television which require judgements of frequency. A new set of four rating numbers is used. The numbers for their interpretations are as follows:

Rate: 1 = never 3 = usually
2 = sometimes 4 = always

Relationship of Instructional Television to Students

20. Do students in your school system keep television notebooks?

21. Do your teachers prepare their students for an instructional television program?

22. Degree to which you feel it is practical for your teachers to prepare their students for a particular instructional television program?

23. How often do your teachers conduct follow-up activities with their students, after they have viewed an instructional television program?

24. Extent to which you feel that the content of instructional television programs is at the appropriate grade level?

Rate: 1 = never 3 = usually
2 = sometimes 4 = always

Instruction and Scheduling of Instructional Television

25. Do you feel that your teachers would like to be able to repeat having a class view a particular instructional television program at a later time after its initial showing?

26. Does the present schedule for instructional television interfere with the general organization of the instructional program in your school system?

27. Do your teachers cooperate with one another in adjusting their class meetings in order that their students may view instructional television programs?

28. Is the decision to use a particular instructional television series in your schools made by you?

29. Is the decision to use a particular instructional television series in your schools made by each individual teacher?

30. Is the decision to use a particular instructional television series in your schools made by each individual principal?

31. Extent to which you feel that the programs on instructional television are up-to-date in terms of the validity of their content?

32. Extent to which you feel your teachers learn subject matter content as a result of watching instructional television?

33. Extent to which you feel your teachers learn teaching techniques from watching the television instructor?

34. Extent to which you feel that your teachers organize their classroom activities around instructional television lessons?

35. Extent to which you feel that the use of instructional television tends to lend structure to the classroom lesson in your school?

36. Extent to which you feel that the use of instructional television causes your teachers to plan their lessons more closely?

37. Extent to which you feel that the instructional television presentations are appropriate for the grade level for which they are designed?

Relationship of Instructional Television to Parents and PTA Groups

38. Extent to which PTA groups in your school system devote time to instructional television and its use in the schools?

39. Do PTA's in your school system give financial aid toward the purchase of materials or equipment related to instructional television?

In order for us to make as much sense as possible out of the data, our research staff would like to obtain some information about the questionnaire respondents. Would you take a last few minutes and answer the following questions?

40. Your sex.

1) male
2) female

41. Your age.

1) Under 25
2) 25-35
3) 36-45
4) 46-55
5) over 55

42. Number of years you have been a curriculum specialists or coordinator including this year.

1) 1
2) 2-5
3) 6-10
4) 11-15
5) more than 15

43. Highest college degree or certificate held. (Check only one.)

1) Bachelor's
2) Master's
3) Specialist (6th Year)
4) Doctorate

44. Number of years you were a classroom teacher.

1) less than 3
2) 3-6
3) 7-10
4) 11-15
5) more than 15

45. Number of years you were a principal.

1) 0
2) 1-3
3) 4-6
4) 7-10
5) more than 10

46. Approximate total number of pupils in your school system.

1) less than 1000
2) 1000 - 3000
3) 3000 - 6000
4) 6000 - 20,000
5) more than 20,000

47. Number of elementary schools in your school system.

1) less than 5
2) 5-10
3) 11-20
4) 21-50
5) more than 50

48. Number of elementary schools in your school systems equipped with television sets.

1) less than 5
2) 5-10
3) 11-20
4) 21-50
5) more than 50

ED 076622

Appendix G

Instructional Television Questionnaire -- Parent Form

Date: _____ ID No. _____ (For office use only)

How many children in your family _____

Please indicate the grade level and school each child attends _____

_____

Please circle either yes or no for each question.

Yes No 1. Do you ever watch what is presented on one of the television stations operated or leased by the Georgia State Department of Education between the hours of 8:30 a.m. and 3:00 p.m.?

Yes No 2. Does your child(ren) ever spontaneously discuss a program or programs he has seen in school?

Yes No 3. Do you feel that instructional television helps your child with his homework?

Yes No 4. Have you attended any school related meetings in the last year at which instructional television was discussed?

Yes No 5. Have you attended any school related meetings in the last year at which an individual from the Georgia State Department of Education spoke on instructional television in the schools?

Yes No 6. Have you read any articles in the last year, in either newspapers or magazines, devoted to instructional television?

Yes No 7. Do your children ever watch instructional television between the hours of 8:30 a.m. and 3:00 p.m. when they are at home during the school year?

Yes No 8. Are your children ever required to watch a television program as a homework assignment?

9. In the remaining space and on the back of this sheet, please suggest any additional questions that you believe should be included on future editions of this questionnaire?

ED 076623

Appendix H

COMMUNIQUE EVALUATION FORM

Name of Communique: _____

Date Seen: _____

Directions: Please rate each statement by selecting an appropriate number. Mark your choice on the special answer sheet with a soft lead pencil if at all possible. If a particular statement does not apply to you or your situation, or you honestly feel you cannot make a judgment about it, leave the space for that item blank. If you wish to change a rating be sure to erase completely before making a new mark. Note that the answer sheet is set up so that you make ratings to questions numbered sequentially across the page from left to right.

1 = Poor
2 = Fair
3 = Average
4 = Above Average
5 = Excellent

1. The extent to which this communique will aid you in your classroom teaching.
2. Effectiveness of presentation.
3. The extent to which topics presented in the communique are relevant to your teaching situation.
4. Usefulness of information provided by the communique.
5. Clarity of communique objectives.
6. The effectiveness of the format of the communique.
7. Organization of the communique.
8. Extent you feel that you will be able to incorporate the suggested teaching techniques into your classroom.
9. Scheduling of this particular communique.
10. Accessibility of resources suggested in this communique.
11. Value of guest lecturer or presenter (if applicable).
12. Practicalness of television teacher suggestions.
13. Emphasis and amount of time given each lesson covered in the communique.
14. Accuracy of material presented in communique.

Rate each of the following statements numbered 15-20 indicating your judgment of the extent to which the communique

15. will directly contribute to the subject matter of your class.

16. will enrich the instructional program of your class.

17. will help you stimulate student interest in the subject.

18. contains materials usable for follow-up activities.

19. will help you structure content in a manner that will help students realize the objectives of the entire series of instructional television programs.

20. will help you structure content in a manner that will help students realize the objectives of the course

21. Overall worth of the communique in terms of the time that you spent watching it.

22. List what you see as the instructional strengths of the television teacher.

23. List what you see as the instructional weaknesses of the television teacher.

24. What other questions do you feel should be added to this questionnaire?

ED 076624

Appendix I

MANUAL LESSON EVALUATION FORM

Name of Manual: _____

Lesson Number: _____ Date: _____

Directions: Please rate each statement by selecting an appropriate number. Mark your choice on the special answer sheet with a soft lead pencil if at all possible. If a particular statement does not apply to you or your situation, or you honestly feel you cannot make a judgment about it, leave the space for that item blank. If you wish to change a rating be sure to erase completely before making a new mark. Note that the answer sheet is set up so that you make ratings to questions numbered sequentially across the page from left to right.

1 = Poor
2 = Fair
3 = Average
4 = Above Average
5 = Excellent

TM 000 229

1. Comprehensiveness of information in manual available for teaching.
2. Unity of lesson ideas.
3. Degree of correlation of lesson with state textbook guides.
4. Suggestions for follow-up exercises after each lesson.
5. Practicalness of follow-up exercises.
6. Suggestions for pre-television exercises.
7. Practicalness of pre-television exercises.
8. Availability of materials and/or equipment required for follow-up exercises.
9. Availability of materials and/or equipment required for pre-television exercises.
10. Appeal of lesson content to students.
11. Level of difficulty for students.
12. Adequacy of lesson bibliography.
13. Articulation of this lesson with related lessons.
14. Definitions of new and unfamiliar terms.
15. Accuracy of lesson material.

16. Readability of lesson material.

17. Adaptability of lesson material for classroom use.

18. Adequacy of illustrative material.

19. Usefulness of appendix and supplementary materials.

20. Integration of illustrative material with text.

The following six questions deal with various characteristics of the entire program manual.

21. General physical appearance of manual.

22. Convenience of left hand binding.

23. Adequacy of print size and type.

24. Use of center and side headings.

25. Size of manual (outside dimensions).

26. Type of binding.

ED 076625

Appendix J

PATTERNS OBSERVATION SUMMARY

Observer _____ Teacher _____

School _____ Date _____

Time Begin Observation _____ Time End Observation _____

Objectives 1 - 52 deal with content of telelesson 30.

	Teacher Gives	Teacher Asks	Pupil (s) Responds
1. Unit of measure must be the same unit as the thing being measured			
2. Measurements are expressed by numbers			
3. Measurements are approximate			
4. The smaller the unit of measure chosen, the more precise the measurement			
5. Definition of space figure			
6. Examples of space figure			
7. Definition simple closed surface			
8. Examples of simple closed surfaces			
9. Pointing out of interiors of simple closed surfaces.			

	Teacher Gives	Teacher Asks	Pupil (s) Responds
10. Examples of different plane regions which can be visualized as simple closed surfaces			
11. Different plane regions cut out to show how simple closed regions can be constructed from them.			
12. Definition of 3-D space region			
13. Examples of 3-D space regions			
14. Definition of unit space region			
15. Definition of volume			
16. Differences between 2 approaches to study of geometry introduced			
17. Similarities between the 2 approaches to introducing the study of geometry			
18. Using arbitrary unit of length (e.g. string) count off measure of a one-dimensional line			
19. Measuring area of 2-D plane region by placing square units of uniform size on given plane region and counting number of square units necessary to cover plane region			

Activity comparing volumes of different size bottles:	Teacher Gives	Teacher Asks	Pupil (s) Responds
20. Arrangement and numbering of bottles			
21. Listing in descending order six bottles having largest volume			
22. Poll to determine which eight bottles have greatest volumes			
23. "Finalist" bottles placed in full view of class			
24. Deciding which bottle is largest, next largest, etc.			
25. Selected bottles are lined up in descending order			
26. Largest bottle is filled with water or sand			
27. Contents of largest bottle is poured into next largest bottle on down until descending order is determined			
28. Lists are checked			
29. Principle from experiment			
Activity in estimating volumes fruit jars of same size by using various unit space regions:			
30. Students are paired			
31. Jars filled with various units space regions (peas, beans, sand, marbles)			

	Teacher Gives	Teacher Asks	Pupil (s) Responds
32. Estimation of number of unit space regions in different jars			
33. Discussion of estimation made by each pair of students			
34. Estimation of unit space regions in each jar			
35. Finding of most efficient way of estimating content of jars without counting each unit space region			
36. Estimating by counting number of items cap or top of jar will hold and counting number of topsful that will go into jar			
37. Estimating by emptying jar and covering bottom with items, if jar is relatively straight. Using one item to see how many times it will fit up the side of the jar.			
38. Estimating by another method other than number 38			
39. Opportunity for each pair of students to measure at least 3 jars containing different unit space regions			
39a. Discussion of Principle from experiment			
40. Conclusion hoped for is no one wants to measure jar with sand			

	Teacher Gives	Teacher Asks	Pupil (s) Responds
41. Conclusion that jars with smaller items hold more items than jars with larger items			
42. Conclusion that smaller the unit of measure the closer the approximation of the volume of the jar			
43. Conclusion that volume may be measured by multiplying the number of items in layer by number of layers			
Worksheet activity			
44. Various size vases on worksheet are examined			
45. Students guess which of vases will hold most water			
46. Discussion of all choices			
47. Questions listed at end of manual are asked: At what point would water be in each of these vases if the vases were half full?			
48. Question: At what point would the water be in each of the vases if the vases were a quarter full?			
49. Question: Is half the height of the vase the half way point on all the vases?			
50. Students mark half way point on each vase			

	Teacher Gives	Teacher Asks	Pupil (s) Responds
51. Other questions asked			
52. Principle of experiement			

Objectives 53 - 75 deal with content of telelesson 31.

Discussion of whether unit of length, unit of area, or unit of volume would be used to determine measures of various space figures such as these listed:

	Teacher Gives	Teacher Asks	Pupil (s) Responds
53. Size of schoolroom floor			
54. Length of curtain rod			
55. Amount of ice that can fit in picnic ice chest			
56. Size of gas tank in school bus			
57. Size of a mirror			
58. Size of a desk drawer			
59. Size of a packing carton			
60. Height of a door			
61. Size of a chalk box			

	Teacher Gives	Teacher Asks	Pupil (s) Responds
62. Other (indicate number of other examples)			
Demonstration of way estimate volume of space regions in following way:			
63. Bottom of space figure is filled with unit space regions			
64. Unit space regions necessary to fill bottom of space figure are counted			
65. Number of space regions which will fit up side of space figure estimated			
66. Number of layers multiplied by number of units in each layer, thus arriving at an estimate of number of unit space regions in the space figure			
67. Formula for obtaining volume of cube or rectangular prism: volume = area of base X height			
68. Formula for obtaining the volume of rectangular prism: volume = length X width X height			
69. Formula for obtaining volume of a cube: Volume = length of side X length of side X length of side			
70. Class views various rectangular prisms and cubes and each student decides on volume of each by following the described procedures in numbers 63 through 66			

	Teacher Gives	Teacher Asks	Pupil (s) Responds
71. Problems to solve using the formula: Volume = area of base X height			
72. Problems in finding volume of figures having other than square or rectangular bases Students are asked to find maximum and minimum volume of each			
73. Volume of each figure is estimated			
74. Other activity or classroom exercises			
75. Teacher reads reference material listed in manual.			

MATERIALS CHECKLIST

Directions: Please take this checklist with you each time you visit the classroom. Check once if you find evidence of any of the materials in the classroom. For example: If you observe a group of different size bottles in the classroom, even if they are not used, you should place a check in the appropriate column. If you observe the teacher using additional instructional materials, related to the lesson, please describe these.

	First Observation	Second Observation	Third Observation	Fourth Observation
1. Group of different size bottles				
2. Group of same sized jars, with caps. Jars should be filled with different fillers, e.g. beans, peas, sand, acrons, marbles, sweet-gum balls, etc.				
3. Empty jar, top and paper bag for each pair of students				
4. Worksheets (p. 223 from Teacher Manual)				
5. Worksheets (p. 226 from Teacher Manual)				
6. Comment: describe any additional materials teacher has prepared which are related to instructional objectives. (specify to which visit comment applies)				

ED 076626

Appendix K

WCES - 20

EDUCATIONAL TELEVISION QUESTIONNAIRE

University of Georgia

Georgia State Department of Education

For Office Use Only

1-5 1. What is your Zip Code? (This is needed to assist in finding the viewing range for television stations in your area.) _____

6 2. What is the age of the head of the household?
__1. Under 25 __3. 35-49 __5. 65 and over
__2. 25-34 __4. 50-64

7 3. Please indicate the highest level of education reached by the head of the household? (Check the highest level reached.)
__1. Grammar School
__2. Some High School
__3. High School Grad. or Equivalent
__4. Some College
__5. College Graduate
__6. College Grad. plus additional work.

8 4. Which of the following best describes the occupation of the head of the household?
___1. Manual or unskilled labor.
___2. Service industries-barber, hairdresser, waiter, etc.
___3. Protective worker-policeman, fireman, guard, etc.
___4. Skilled worker-plumber, carpenter, machinist, etc.
___5. Foreman or supervisor.
___6. Clerical sales-salesman, sales clerk, secretary, etc.
___7. Owner or manager-office manager, own or manage business, department manager, etc.
___8. Professional -doctor, lawyer, teacher, etc.
___9. Retired.
___0. Other

9 5. How many people live in your household? _____

10-13 6. How many members of your household fall in each of the following age categories?
__1. Under 6 __2. 6-12 __3. 13-16 years __4. 17-20 years

14 7. Do you live in a
__1. house you own?
__2. house you rent?
__3. apartment you own?
__4. apartment you rent?
__5. mobile home you own?
__6. mobile home you rent?

15 8. How many cars are owned by your household? _____

16 9. How many daily newspapers do you receive or purchase?
__1. none __2. one __3. two __4. three __5. four or more

17 10. How many magazines do you receive or purchase regularly each month?
__1. none __2. one __3. two __4. three __5. four or more

18 11. How many black and white television sets do you have in your household? ____

19 12. How many color television sets do you have in your household? ____

20-33 13. How many hours would you estimate the members of your household watch television in the average day? (Please give the total number of hours in each case.)

Children under 6	___hours	Woman of the house	___hours
Children age 6-12	___hours	Man of the house	___hours
Teenagers age 13-16	___hours	Other adults	___hours
Young adults age 17-20	___hours		

34 14. What reason comes closest to your reason for watching television (Please check only one.)
__1. There is some beautiful art and music on television.
__2. It is a way of getting an education; I learn something from television.
__3. It relaxes me.
__4. It gives me an idea of how other people live, it is exciting.
__5. It gives me something to talk about with my friends, it gives me company.
__6. Other.

(Over Please)

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35 15. How do you go about picking the television program your family or you will watch? (Please check only one.)
__1. We turn the set on to one channel and leave it on that channel.
__2. Turn the dial until we see a program that looks good.
__3. The same program every week, don't make a decision with each program change.
__4. Talk it over with the other members of the household?
__5. Station announcements.
__6. Consult TV Guide.
__7. Consult WGTV Program Guide.
__8. Consult newspaper.
__9. Other.

36 16. Have you ever watched WCES, Channel 20? __1. Yes __2. No (If you answered yes to this question, please skip to question number 18.)

37 17. If you answered no to question 16, which of the following best describes your reason for not watching WCES, Channel 20? (Please check only one.)
__1. Poor reception
__2. Don't like the programs.
__3. Never heard of WCES, Channel 20?
__4. Other.

IF YOU ANSWERED NO TO QUESTION 16 AND HAVE COMPLETED QUESTION 17, PLEASE STOP AND PUT THIS QUESTIONNAIRE IN THE SELF ADDRESSED STAMPED ENVELOPE AND DROP IT IN YOUR NEAREST MAILBOX. THANK YOU FOR YOUR HELP AND COOPERATION IN OUR PROJECT.

38-51 18. If you answered yes to question number 16, how many hours would you estimate the members of your household watch the public television that is on WCES Channel 20 in an average week?

Children under 6	__hours	Woman of the house	__hours
Children age 6-12	__hours	Man of the house	__hours
Teenagers age 13-16	__hours	Other adults	__hours
Young adults age 17-20	__hours		

52-76 19. How often in the last month has any member of your household viewed any of the following television programs. (Please check one response for each program.)

	Not at all	Regularly	Irregularly
52. Georgialand	__1.	__2.	__3.
53. Sesame Street	__1.	__2.	__3.
54. University News	__1.	__2.	3.
55. Bridge with Jean Cox	__1.	__2.	__3.
56. Shavin's Column	__1.	__2.	__3.
57. Sound of Youth	__1.	__2.	__3.
58. The Coach Lawson Show	__1.	__2.	__3.
59. Black Journal	__1.	__2.	__3.
60. NET Playhouse	__1.	__2.	__3.
61. The McCullough Martin Show	__1.	__2.	__3.
62. Firing Line (William Buckley)	__1.	__2.	__3.
63. TV High School	__1.	__2.	__3.
64. NET Journal	__1.	__2.	__3.
65. French Chef (Julia Child)	__1.	__2.	__3.
66. The Forsyte Saga	__1.	__2.	__3.
67. Mr. Rogers	__1.	__2.	__3.
68. The advocates	__1.	__2.	__3.
69. Aunt Lollipop	__1.	__2.	__3.
70. Law Enforcement Training	__1.	__2.	__3.
71. Why You Smoke	__1.	__2.	__3.
72. Men and Ideas (Dr. William Hale)	__1.	__2.	__3.
73. High and Wild	__1.	__2.	__3.
74. The American West	__1.	__2.	__3.
75. Screen Classics	__1.	__2.	__3.
76. Government Story	__1.	__2.	__3.

77 20. How did you first learn about WCES, Channel 20? (Please check only one.)
__1. Finding it on the set.
__2. Heard about it on television.
__3. Heard about it from others.
__4. Read about it.
__5. Other

78 21. What reason comes closest to your reason for watching WCES, Channel 20?
__1. There is some beautiful art and music on television.
__2. It is a way of getting an education, I learn something from television.
__3. It relaxes me.
__4. It gives me an idea of how other people live, it is exciting.
__5. It gives me something to talk about with my friends.
__6. Other.

79 22. Have you talked to anyone (neighbor, acquaintance, friend) about something you saw on WCES, Channel 20 during the past week? __1. Yes __2. No

THANK YOU FOR TAKING TIME TO COMPLETE THIS QUESTIONNAIRE. PLEASE PUT THIS FORM IN THE SELF ADDRESSED STAMPED ENVELOPE AND DROP IT IN YOUR NEAREST MAILBOX.